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AN ENQUIRY INTO THE Cauſe and Origin OF EVIL.

In which the Principal Phænomena of Nature are explained according to the true Principles of Philoſophy; more particularly in Anſwer to Mr. *Bayle* and other Defenders of the antient *Manichæan* Scheme of two independent Principles.

Being the Subſtance of Eight SERMONS Preached at the Pariſh-Church of St. *Mary le Bow*, in the Year 1719, at the Lecture founded by the Honourable *ROBERT BOYLE*, Eſq;

By *JOHN CLARKE*, D. D.
Chaplain in Ordinary to His Majeſty.

Iſaiah xlv. 7. *I form the Light, and create Darkneſs: I make Peace, and create* Evil: *I the Lord do all theſe things.*

London, Printed for JAMES KNAPTON, at the *Crown* in St *Paul*'s Church-Yard. 1720.

S. aug. de Civit. Dei, Lib. 41 cap. 22.

TO THE

RIGHT HONOURABLE

RICHARD,

Earl of Burlington:

The Right Reverend Fathers in God,

CHARLES, *Lord Bishop of* Norwich,
EDMUND, *Lord Bishop of* Lincoln,
SAMUEL, *Lord Bishop of* Carlile,

AND

WHITE, *Lord Bishop of* Peterborough,

TRUSTEES

Appointed by the Most Reverend Father in God, THOMAS, late Lord Archbishop of *Canterbury*, the last surviving Trustee Named

BY THE HONOURABLE

Robert Boyle, Esq;

This Discourse is most humbly dedicated,

THE

PREFACE.

HE Foundation of all Religion both Natural and Revealed, being laid in these two Things, that God is, *and that* He is the Rewarder of them that diligently seek him; *it becomes every One who has any Regard for his present and future Happiness, to endeavour after the clearest Evidence, and highest Conviction possible, of such sub-*

ſtantial, and important Truths. Now there are only two Ways by which we can be ſatisfied in theſe Particulars; And they are, either an Examination of the Works of the Creation, or elſe an extraordinary Manifeſtation of the Will of God from Heaven. By the former of theſe, we come to the Knowledge of the Exiſtence and Wiſdom and Goodneſs of That Being, who is the Cauſe of ſuch wonderful and ſurprizing Effects; and by the latter we are aſſured of the final Juſtice and Equity of all his Diſpenſations and Proceedings towards his Creatures. It is the firſt of theſe only, that the following Diſ-

courſe

courſe relates to; viz. *to vindicate the Works of the Creation in thoſe Particulars, which have been thought beneath the Skill of an infinitely wiſe and good Being. Though Atheiſtical Men have not been able to ſhow wherein Such Arguments are defective, as have been urged to prove from a Neceſſity of Nature, that an infinitely Wiſe and Good Being muſt exiſt; yet they have imagined from the obſervation of Facts, that the contrary may be made appear, in that there are ſome Parts of the Creation which are ſo irregular and imperfect, as not to be reconcileable with the Notion we have of ſo per-*

fect and excellent a Cauſe; and conſequently that theſe two things are inconſiſtent with each other. I have endeavoured to make appear the Weakneſs and Folly of Theſe Men; by ſhowing that the principal Inſtances alleged by them, prove the direct contrary to what they are alleged for; and that it is wholly owing to their Ignorance of the Ends and Uſes of thoſe Things, that they have raiſed ſuch Objections againſt them. For upon the moſt exact Inquiry, according to the niceſt Obſervation, and ſtricteſt Rules of Reaſoning; every Particular, which we have any Means of knowing the Circumſtances of, is demonſtra-

demonſtrably made the moſt uſeful and ſerviceable, that the Nature of the Thing is capable of; And we ought by Parity of Reaſon to conclude the ſame of thoſe Things, which we have not had Opportunity or Means of coming to ſo thorough a Knowledge of. The farther we carry our Improvement, the more univerſal does this Argugument appear, till at laſt it muſt coincide with the other Method of Arguing from the neceſſary Perfections and Attributes of the Deity; ſo that they mutually ſtrengthen and confirm each other. Theſe are ſufficient to convince any ſincere and unprejudiced Perſon, ſo

far

far as Religion and Vertue is concerned; But againſt Obſtinacy and Vice, there is no Remedy of this Kind.

The

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Printed for James Knapton, *at the* Crown *in St* Paul's *Church-Yard.*

AN ENQUIRY INTO THE CAUSE and ORIGIN OF EVIL.

WHAT is the * *Cause* and *Original* of *Evil* is a very important and very ancient Queſtion; Every Man's own Experience of what befals himſelf in this preſent State, and a ſmall Obſervation of the Condition of others, ſufficiently teaches him how imperfect

The Introduction concerning the preſent State of Things.

* Τῶ Θεῶ τὰ ἀγαθὰ ποιεῖν, τὸ πόθεν τὰ κακὰ. *Max. Tyrius Diſſert.* 25.

Things are, and what *Disorder* and *Confusion* they are liable to. The natural Faculties and Powers of Men, either with regard to their Minds or their Bodies, are at best very weak and infirm. Their Understandings are capable of comprehending but a few Truths, their Judgment is very unsettled, and their Practice consequent thereupon irregular and uncertain. And with respect to their Bodies, the *Materials* of which they are composed, the *Manner* in which they are framed, and the *Laws* they are subject to, render them very frail and brittle, but of a few Years Duration at longest, and subject to Dissolution much sooner. And the same may be affirmed of the Things without us, the whole *material* World. The present Constitution of it is such as makes it liable to perpetual Changes and Alterations,

rations, which cauſe great *Diſorder* and *Irregularity*. This is what we obſerve in the Things themſelves conſidered ſingly: But if we apply them to each other, and ſee their mutual Influences and Effects, the *Diſorder* will appear ſtill the greater. From the ſtrict Union of Soul and Body, the ſpiritual and rational Part, with the material and ſenſitive, ariſes that Diſcord deſcribed by St. *Paul*, Rom. 7, 23, *But I ſee* (or I experience) *another Law in my Members warring againſt the Law of my Mind, and bringing me into Captivity to the Law of Sin which is in my Members*. Thus the Dictates of Reaſon and Conſcience draw Men one way, and the Suggeſtions of Senſe and Paſſion entice them another. From the various external Objects which the World affords, all which are

accommodated to the Bodily Senſes, and make ſuch deep Impreſſions on the Mind, and often interfere with what calm and impartial Reaſon directs; ariſe alſo many *Neglects* and *Abuſes*. Theſe St. *John* comprehends under *the Luſt of the Fleſh, and the Luſt of the Eyes, and the Pride of Life, which is all that is in the World*, 1 John 2. 16. To theſe we may add the many *natural Evils* which Men are ſubject to, and which are entirely out of their Power, ſuch as *Sickneſs*, *Pain*, and *Death*, either ariſing from within themſelves, or being cauſed from without by *Storms*, by *Peſtilences*, by *ſavage Creatures*, and the like. And to compleat the whole, we may take in the *moral Evils* which proceed from the *Abuſes* of Men. Under which are comprehended all Kinds of *Sin* and *Wickedneſs*, which is

eloquently deſcribed by the Prophet *David*, and from him by St. *Paul*, Rom. 3. 10, 18. *There is none righteous, no not one; there is none that underſtandeth, there is none that ſeeketh after God, they are all gone out of the way, they are together become unprofitable, there is none that doeth good, no not one; their Throat is an open Sepulchre, with their Tongues they have uſed Deceit, the Poiſon of Aſps is under their Lips; whoſe Mouth is full of Curſing and Bitterneſs, their Feet are ſwift to ſhed Blood; Deſtruction and Miſery are in their Ways, and the Way of Peace have they not known, there is no Fear of God before their Eyes.*

Such a Kind of Survey as this of the Condition and Circumſtances of Things, hath led Men to enquire into the Cauſe and Reaſon

The different Effects of ſuch Conſiderations upon Men.

of them: Which has produced different Effects, according to their respective Inclinations or Views.

Upon religious Persons. Pious and sincere Men have been very much shock'd and disturbed with such Observations, and have been sometimes driven to complain of the Dispensations of Providence. Thus King *David* says, *Psal.* 73. 16. *When he thought to know this, it was too painful for him.* And thus the Prophet *Jeremy* complains of God Almighty's Dealings with Men, *ch.* 12. *v.* 1. *Righteous art thou, O Lord, when I plead with thee, yet let me talk with thee of thy Judgments: wherefore doth the Way of the Wicked prosper? Wherefore are all they happy that deal very treacherously?*

Upon irreligious Persons. On the other hand, wicked and irreligious Men have taken occasion from hence absolutely to deny the Providence of God, that he at all

all created the World, and all Things in it, at the beginning; or that he has ſince had any Hand or Share in the Government of it. This was the Notion of the *Epicureans* of old, as appears from the Account* *Lucretius* himſelf gives of them: *The Syſtem of the World*, ſays he, *could not poſſibly be the Effect of a Divine Power, becauſe it is ſo very faulty.* And the Inſtance he gives of its Faultineſs is *e cœli rationibus*, from Aſtronomy, or the Conſtitution of the Heavens; that the Inclination of the Ecliptick to the Equator is ſuch, as renders the greateſt Part of the Earth uninhabitable both to Men and other Creatures; the Heat in the torrid, and the Cold in the frigid Zones, being ſo exceſſive great, that they

The Epicurean Notion.

* Nequaquam nobis *divinitus* eſſe creatam
Naturam mundi, quæ tanta eſt prædita culpa.
Lucretius, lib. 2. *v.* 180.

cannot ſubſiſt under it. This is his principal Argument. To which he adds the Uſeleſneſs of a great Part of the Earth to Mankind, by reaſon of the many Seas and Rocks and barren Heaths, and the Difficulty of the other Parts yielding Fruit, without great Labour in tilling and manuring it; and after all, its Liableneſs to have them deſtroyed by Storms and Tempeſts, or by wild Beaſts and Animals. In a word, their Method of arguing I ſhall give you in the Words of a learned Writer thus. **The Topick of Evils in general is inſiſted upon by them* (*the* Epicurean *Atheiſts*) *after this manner. The ſuppoſed Deity and Maker of the World was either* willing *to aboliſh all Evils, but not* able; *or he was* able, *but not* willing; *or thirdly, he was neither*

* Dr *Cudworth*'s intellectual Syſtem, p. 78. and *Lactantius de Ira Dei*, cap. 13.

neither willing *nor* able; *or elſe, laſtly, he was both* able *and* willing; *This latter is the only thing that anſwers fully to the Notion of a God. Now that the ſuppoſed Creator of all Things was not thus both* able *and* willing *to aboliſh all Evils, is plain, becauſe then there would have been no Evils at all left; wherefore ſince there is ſuch a Deluge of Evils overflowing all, it muſt needs be that either he was* willing, *and not* able, *to remove them, and then he was* impotent; *or elſe he was* able, *and not* willing, *and then he was* envious; *or laſtly, he was neither* able *nor* willing, *and then he was both* impotent *and* envious. This was their Method of arguing concerning *natural Evils*, ſuch as *Pain* and *Trouble*, and the like; And their Objection about *moral Evils* was much the ſame, *viz.* That if the Divine

Divine Providence concerned it ſelf at all in the World, it would appear in Human Affairs, in protecting the Innocent and Virtuous, and in diſcouraging the Prophane and Wicked; but they obſerved *that all Things came alike to all, that there was one Event to the Righteous and to the Wicked, to the Good, and to the Clean, and to the Unclean, to him that ſacrificeth, and to him that ſacrificeth not; as is the Good, ſo is the Sinner, and he that ſweareth, as he that feareth an Oath*, Eccl. 9. 2. Thus the prophane *Dionyſius*, notwithſtanding his open Contempt, and ridiculing of all Religion, and every ſacred Thing, * yet lived free from Divine Vengeance, and died peaceably in his Bed. And *Diogenes* the Cynick, tho'

The Notion of the Stoick and other Philoſophers.

* Hunc nec *Olympius Jupiter* fulmine percuſſit, nec *Æſculapius* miſero diuturnoque morbo tabeſcentem interemit; verum in ſuo lectulo mortuus in Tym-

tho' himſelf acknowledged the Being and Providence of God, yet was forc'd to confeſs, upon ſeeing the Proſperity of *Harpalus*, a famous Robber and Pirate in thoſe Times, who committed many great and notorious Wickedneſſes, that he did *Teſtimonium dicere contra Deos*, bear Teſtimony againſt the Gods. This Argument is at large ſet forth by the *Academick* in * *Tully*; where by a long Induction of particular Inſtances of very great and enormous wickedneſſes committed by Men in † private and in publick, he endeavours to ſhew, that it had been better for Mankind if

panidis rogum illatus eſt, eamque poteſtatem quam ipſe per ſcelus nactus erat, quaſi juſtam & legitimam hæreditatis loco tradidit. *Cicero de Nat. Deor. Lib.* 3. § 35.

* *De natura deorum, Lib.* 3. *Sect.* 26.

† Sentit domus uniuſcujuſque, ſentit forum, ſentit curia, campus, ſocii, provinciæ, ut quemadmodum ratione recte fiat, ſic ratione peccetur, &c. *Ibid.*

they

they had had no *Reaſon* at all given them, than ſuch a Share of it as they have, which they ſo perpetually abuſe; and conſequently that God did not herein conſult the Good and Benefit of Men, and therefore they are not under the Direction of his Providence.

Poetical Repreſentations of the ſame. And as the Philoſophers amongſt the Heathen reaſoned in this manner concerning the preſent State of Things, ſo likewiſe was it the Subject Matter of the Poets, who entertained their Readers and Hearers with lively Repreſentations of the many Evils and Misfortunes that Mankind were ſubject to. Thus* *Homer* repreſents *Jupiter* as having two Hogſheads ſet before him, the one filled with *evil*, the other with *good* Things, a Mixture of which he diſpenſes amongſt

* *Lib. ult. Iliad.* Δοιοὶ γὰρ πίθοι κατακεῖται ἐν Διὸς ἔδει.

mongſt Mankind, ſometimes taking out *Evil*, and ſometimes *Good*. And this Topick has ſupplied the Tragædians with Plenty of Inſtances to exerciſe their Inventions, and to divert their Auditors. After this manner have Atheiſtical Men treated this Subject of the *Original of Evil*, ſo as to collect from the Obſervation of Facts, either that there was no God at all, by whom all Things were at firſt created; or at leaſt that they are not at preſent under his Divine Care and Inſpection.

The Notion of the ancient Magians.

There are others who have been more modeſt in handling this Subject: Who, whatever the natural Conſequence of their Solutions may be, have not ſo barefacedly attack'd the Wiſdom of Divine Providence. And Theſe are they who have admitted Two firſt *Principles* or *Cauſes* of all Things; the

the *one* the Original from whence every thing that is *good* proceeds, and the *other* the Original from whence all *Evil* ſprings. This was the principal Doctrine of the ancient *Magians*, of the Religion of the *Medes* and *Perſians*, eſtabliſhed for many Ages in the Eaſtern Countries before the Reign of *Darius*; A ſhort Account of which a learned *Author gives us in the following Words: *They held the being of two firſt Cauſes, the firſt Light, or the good God, who was the Author of all* Good; *and the other Darkneſs, or the evil God, who was the Author of all* Evil; *and that of the Mixture of theſe two, as they were in a continual Struggle with each other, all Things were made.* And to this the following Words of the Prophet

* Dr *Prideaux*, Scripture Connexion, Vol. 1. p. 169. Fol. Edit.

phet *Iſaiah* ſeem to relate, being ſpoken by him to *Cyrus* King of *Perſia*, and therefore probably had reference to this Sect of the *Perſians*, who then held *Light* and *Darkneſs*, *Good* and *Evil*, to be the Supreme Beings, without acknowledging the one only true God, who is the ſole and original Author and Cauſe of all Things. Verſe 5, 6, *I am the Lord, and there is none elſe, there is no God beſide me: I girded thee, tho' thou haſt not known me, that they may know from the riſing of the Sun, and from the Weſt, that there is none beſide me: I am the Lord, and there is none elſe, I form the Light and create Darkneſs, I make Peace and create Evil, I the Lord do all theſe Things.* Theſe firſt Cauſes or Principles of *Good* and *Evil* were by the *Perſians* called *Oromaſdes*

and

and *Arimanius*; by the *Egyptians*, *Osiris* and *Typhon*; by the *Chaldæans*, good and bad *Planets*; by the *Græcians*, *Jupiter* and *Pluto*; and the good Principle was also called *God*, and the bad Principle *the Devil*, as *Plutarch* informs us.

The Manichæan Notion.

And * in the early Ages of Christianity we find this same Opinion brought out of *Persia* by one *Manes* a *Persian*, who introduced it into the Christian Religion, and formed the Sect of the *Manichæans*: Of whom † *Eusebius* gives this short Account: *That he vented false and atheistical Opinions, patched up out of an infinite Number of old extinguished Heresies, which he brought from* Persia *into this Part*

* *In the Third Century.*

† Δόγματα γε μὴν ψευδῆ καὶ ἄθεα ἐκ μυείων πάλαι πεφυκότων αἱρέσεων συμπεφορημένα κατηύρας, ἐκ τῶν πέρσῶν ἐπὶ τὴν καθ' ἡμᾶς οἰκουμένην ὥσπερ τινα θανάσιμον ἰὸν ἐκφορήσας, ἀφ' ἑαυτοῦ δὴ τὸ μανιχαίων δυσσεβὲς ὄνομα τοῖς πολλοῖς εἰς ἔτι νῦν ἐπιπολάζει; τοιαύτη μὲν οὖν ἡ καθ' ἡμᾶς τοῦ ψευδωνύμου γνώσεως ὑπόθεσις καὶ τοῦ ἀνθηλωμένου ὑποφυέσης κακίας, *Eusebii Eccles. Hist. Lib. 7. Cap. 25.*

Part of the World, and ſpread the deadly Poiſon of them about; from whom the impious Name or Sect of the Manichæans *is derived, and ſtill remains amongſt many.* To this, * *Socrates* the Hiſtorian adds the Opinion it ſelf: *He attempted,* ſays he, *to introduce the Opinion of* Empedocles *and* Pythagoras *into the Chriſtian Religion; he aſſerted that there was two Natures, as* Empedocles *alſo did, the one* good, *and the other* evil; *the* evil *he called* Diſcord, *and the good* Friendſhip. This Sect was at firſt ſettled in many Provinces, ſpread it ſelf very much, and continued a long Time; (ſee *Bayle* under the Word *Manichæans*;) inſomuch that in the 7th Century, under the Name of *Paulicians* (ſee *Bayle* under the

* Τὴν ἐμπεδοκλέους καὶ πυθαγόρου δόξαν, εἰς τὸν χριστιανισμὸν παρήγαγε, δύο φύσεις εἶπων, ἀγαθήν τε καὶ πονηρὰν, ὡς καὶ ἐμπεδοκλῆς, νεῖκος ὀνομάζων τὸν πονηρὸν, φιλίαν δὲ, τὸν ἀγαθόν. *Socratis Eccleſ. Hiſt. Lib.* 1. *Ch.* 17.

the Word *Paulicians*,) from one *Paul*, who became their Head, it had over-run the whole *Roman* Empire; and no leſs than 100000 of them were maſſacred in *Thrace* and *Bulgaria*; which yet did not extinguiſh them, but in Time their Abſurdities were ſo groſs that it came to nothing. But it has been lately revived by a * learned Perſon, who pretends to have cleared it of all thoſe Abſurdities, and affirms that there is no other way of accounting for the preſent Matters of Fact, and that the *Phænomena* of Nature cannot be explained by any other Hypotheſis. He endeavours to illuſtrate his Doctrine in a feigned Diſpute between *Zoroaſter* and *Meliſſus*: The former defends the two Principles of the *Manichæans*, and the latter the one Principle, *viz.* God, to

NB. *The ſame Notion revived by Mr.* Bayle.

* Mr *Bayle*. See his Dictionary, under the Word *Manichæans*.

to be the Cauſe and Author of all Things. Their ridiculous Inventions of a long War between the two Principles, and the Fights and Priſoners which the *Manichæans* ſpeak of, he wholly gives up, as too abſurd to be defended. For, as himſelf ſays, * *in order to render the Hypotheſis the leſs offenſive, the long War between the two Principles, which the* Manichæans *ſpeak of, might be denied, as alſo their Battels and Priſoners rejected; So that the whole might be reduced to the certain Knowledge the two Principles have; that one could never obtain of the other but ſuch and ſuch Conditions; And thus an eternal Agreement might have been made upon this Foot.* After this Preface, he ſtates the Phænomena in the following manner:

* *See* Bayle's *Dictionl. Remark D under the Word* Manicheens. Pour rendre ſon Hypotheſe moins choquante, *&c.*

manner: * *Man*, says he, *is wicked and unhappy. This every one knows by what he experiences within himself, and by that Commerce he is obliged to have with his Neighbours. Five or Six Years Observation is sufficient fully to convince any one of the Truth of this; but they who live longer, and are engaged in Worldly Affairs, know it still more clearly. Travels afford perpetual Lectures upon this Subject; Which shew every where Monuments of Mens Misfortunes and Wickednesses; as appears by the many Prisons, Hospitals, Gibbets and Beggars. Here we see the Ruins of a flourishing City, in another Place the Ruins are hardly to be found.*

* *Bayle ibid.* L'homme est mechant & malheureux, *&c.*

Jam seges est ubi Troja fuit, resecandaque falce;
Luxuriat Phrygio sanguine pinguis humus.

Ovid. Epist. Pen. ad Ulyss.

Read

Read the following excellent Words taken out of a Letter written to Cicero. "Ex Aſia rediens, cum ab "Ægina Megaram verſus naviga- "rem, cœpi regiones circum circa "proſpicere: Poſt me erat Ægina, "ante Megara, dextra Piræeus, ſini- "ſtra Corinthus; quæ oppida, quo- "dam tempore florentiſſima fuerunt, "nunc proſtrata & diruta ante ocu- "los jacent. *Sulpitius ad Ciceronem.*" *Men of Learning, without going out of their Studies, are the proper Perſons to acquire the cleareſt Knowledge hereof, becauſe in reading Hiſtory they have a full View of all Ages and all Places in the World. And Hiſtory, properly ſpeaking, is little elſe but an Account of the Crimes and Misfortunes of Mankind. On the other hand it is obſerved, that theſe two Evils, the one moral, and the other natural, do not take up the whole of Hiſtory; there are every where ſome*

Things that are naturally and morally good, ſome Examples of Virtue and Happineſs. And this makes the Difficulty. Were there none but evil and unhappy Men, there would be no need of an Hypotheſis of two Principles: It is the Mixture of Happineſs and Virtue with Miſery *and Vice, that makes it requiſite.* Here he lays the Streſs of the whole Matter: **Whence is it that Man is ſubject to Pain and* Miſery, *if Man be the Workmanſhip of one only Being, ſovereignly good, holy and powerful? Can he be expoſed to Diſeaſes, Heat and Cold, Hunger and Thirſt, Pain and Grief? Can he have ſo many evil Inclinations? Can he commit ſo many Crimes? Can Sovereign Holineſs produce a criminal Creature? Can Sovereign Goodneſs produce an unhappy Creature? Would not Sovereign*

* Si l'homme eſt l'ouvrage d'un ſeul principe ſouverainement bon, &c. *Bayle ibid.*

reign Power, joined with infinite Goodneſs, furniſh his own Workmanſhip plentifully with good Things, and ſecure it from every thing that might be offenſive and vexatious? And again a little further, * *If Man were the Workmanſhip of a Principle infinitely good and holy, he ſhould not only have been created without any actual Evil, but alſo without any Inclination to Evil, ſince that Inclination is ſuch a Defect as could not have ſuch a Principle for its Cauſe.* Thus we find his ſtating the Caſe, and affirming concerning it, that there is no poſſible way of ſolving theſe Appearances, but by having recourſe to two neceſſary, independent, eternal Principles, directly oppoſite to each other, † *who*

* Que ſi l'homme etoit l'ouvrage d'un Principe infiniment bon & ſaint, il auroit eté creé, &c.

† Les deux principes las du chaos, &c. *Bayle ibid.*

at first put a continual Stop to each others Designs; but at last being weary of this Confusion, they came to an Agreement; each of them yielded something, each of them had a Share in the Production of Man, and in the Laws of the Union of the Soul; the good Principle obtained those which procure to Man a thousand Pleasures, and consented to those which expose him to a thousand Sorrows; and if it consented that moral Good should be infinitely less in Mankind than moral Evil, it repaired the Damage in some other Kind of Creatures, wherein Vice should be much less than Virtue. If many Men in this Life have more Misery than Happiness, this is recompensed in another State; what they have not in a Human Shape, they shall recover under another.

This Notion destructive of all Religion.

Thus we see prophane and atheistical Men in every Age employing

ploying all their Wit and Invention to find out Hypotheſes, in order to ſubvert all Religion, and to encourage Men to go on in the Practice of Iniquity. For to this End all their Diſcourſes manifeſtly tend; either to deſtroy the very Exiſtence of God, to deny his Providence and Government over the World, or to introduce a Plurality of Gods, whereby all religious Worſhip is confounded; or elſe to make God the Author and immediate Cauſe of all Evil and Wickedneſs, and conſequently Men to be mere Machines, not acting of themſelves, but only being acted upon, ſo that they cannot be accountable for what they do or leave undone: Which deſtroys the eſſential and eternal Difference of Good and Evil, Virtue and Vice, and takes away the Foundation of Rewards and Puniſhments. *Theſe*, I ſay,

I ſay, are unavoidable Conſequences of ſuch Hypotheſes, and they are ſuch as the Authors themſelves ſaw, and were not aſhamed to own.

Thus the forecited Perſon affirms, that † *we have no diſtinct Idea that can make us underſtand that a Being (ſuch as Man is) which does not exiſt of it ſelf, can nevertheleſs act of it ſelf.* Zoroaſter *therefore will ſay, that the Free-will which was given to Man, is not able actually to determine it ſelf, ſince it exiſts continually and totally by the Action of God.* What is this but to affirm that Man has no *Free-will*, is no *Agent* at all, but is wholly *paſſive*, and *acted upon* by the Supreme Being, who does every thing in him, and that therefore Man can no more properly be ſaid to be at Liberty than a Watch or a Clock?

† Nous n'avons aucune Idée diſtincte qui puiſſe nous faire comprendre, &c. *Bayle ibid.*

a Clock? Thus ingenious Men make *Hypotheſes*, in order to account for Difficulties; which inſtead of explaining thoſe Difficulties, overthrow the moſt plain and certain Truths in the World. They take *Principles* for granted, which neither themſelves can prove, nor ought others to allow; and then draw ſuch Concluſions from them, as contradict every ones own Experience. In Enquiries of this Nature we ought to conſider,

The Dignity and Weight of this Subject.

Firſt, The Dignity and Weight of the Subject; what Kind of Arguments and Proofs may be expected, and the Manner in which it ought to be treated. Mens Reaſon and Underſtanding was given them on purpoſe that they might uſe them in the Search after Truth, and the whole Creation is a proper Object for them to exerciſe thoſe Powers and Faculties

ties upon. But that which relates more immediately to the Happineſs of Mankind, which teaches him what ſort of a Creature he is, wherein his greateſt Perfection conſiſts, what his proper Buſineſs and Employment ought to be, and what his final Hopes and Expectations, this ſhould be their *principal* Enquiry, and they ſhould endeavour to gain the greateſt Satisfaction in it. The Queſtion now before us takes in all theſe Particulars, and is of the higheſt Importance and Concern; for if we conceive our ſelves to be in a *natural* and *moral* State of *Evil*, and know not what to aſcribe it to, neither how we came into it, nor which way to eſcape out of it, we ſhall be very much perplexed and confounded. Hence have ariſen the extravagant Opinions of *Fate*, as if every thing exiſted neceſſarily

ly in the Manner it does, thro' an eternal Succeſſion of Ages, without any Cauſe or Reaſon: And of *Chance*, as if the whole Syſtem of the Univerſe fell into that Order in which we now ſee it, by a fortuitous Concourſe of Atoms: With numberleſs other incoherent Notions. Hence alſo have ariſen the groſſeſt Superſtition, and moſt abſurd Worſhip of dead Heroes and Kings, and of mere Names and Modes or partial Conſiderations of the Deity, which have been appointed by Tyrannical Governours, to keep the Ignorant in awe, and to ſerve Worldly Purpoſes. And from hence Men have been led into all Kind of Wickedneſs and Immorality, having no Senſe of the Authority of a Deity, no Remorſe of Conſcience, nor any other Obligation to the Practice of Virtue and Honeſty. As therefore we have

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any Regard for the Honour of God, that, as St. *Paul* says, *Rom.* 3. 4. he *may be justified in his* (*Works*, as well as) *his Sayings, and may overcome when he is judged*; As we have any Esteem for Virtue and Truth, which are eternal and immutable, and which are founded in the Nature and Reason of Things; And as we have any Value for our own selves, and that Happiness we are capable of enjoying: We ought diligently to search into the *Cause* and *Foundation* of all the *Evils* incident to Mankind; that we may be able to form a true Judgment of them, that we may know what a Hand we have in bringing them upon our selves, and consequently how we ought to act under them.

Secondly,

Secondly, In ſuch Enquiry we ought to conſider what Kind of Arguments or Proofs are to be expected. For theſe are always proportioned to the Nature of the Subject. In ſome Things they are Demonſtrations, and in others they are only greater or leſs Degrees of Probability. Of Demonſtrations there are two ſorts; Demonſtrations *a priori*, when we argue from the Cauſe to the Effect; and *a poſteriori*, when we argue from the Effect to the Cauſe. Thus when we argue from the Idea's we have of Immenſity, Eternity, neceſſary Exiſtence, and the like, that ſuch Perfections can reſide but in *one* Being, and thence conclude that there can be but one Supreme God, who is the Cauſe and Author of all Things, and that therefore it is contradictory to this to ſuppoſe that there can be

What Kind of Arguments are to be expected on ſuch a Subject.

two

two neceſſary independent Principles, the one the Cauſe of all the *Good*, and the other the Cauſe of all the *Evil* that is in the World; this is an Argument *a priori*. Again, when the *Manichæans* and *Paulicians*, from what they obſerve in Things and Facts, from the many *natural Evils* which they ſee in the World, and the many moral Wickedneſſes which are committed by Men; conclude that there muſt be two different Cauſes or Principles from whence each of theſe proceed; this is arguing *a poſteriori*. According to the former way of Reaſoning, the forementioned Author allows the Defenders of the *one Principle* of all Things to have the Advantage, and

* that

* Ainſi en conſultant ces idées, on ne trouve rien de plus abſurde que l'Hypotheſe des deux principes éternels, & independans l'un de l'autre, dont l'un n'ait aucune bonté, & puiſſe arrêter les deſſeins de l'autre. *Bayle ib.*

that nothing can be more abſurd, if we conſult our own moſt clear and diſtinct Idea's, than the Hypotheſis of two eternal Principles, independent on one another, whereof one has no Goodneſs, and puts a Stop to the Deſigns of the other. But this ſeems to be ſaid becauſe he thinks ſuch *Idea's* are only mere Imaginations of the Mind, and have nothing *without* to anſwer to them; and that therefore the certaineſt Way is to argue *a poſteriori*, by explaining the Phænomena, and giving an Account of the Matters of Fact, which he affirms *the admitting of two Principles does, and therefore* * *he has hit the Mark, and his Method of arguing exceeds the other notwithſtanding the Beauty of Idea's and Reaſons.* Yet the Idea's of Neceſſity,

* Je regagne donc l'avantage. Vous me ſurpaſſez dans la beaute des Idees, &c. *Bayle ibid.*

Unity, Immenſity, and the like, are as clear and diſtinct, and the Exiſtence of a Being to whom they belong does as unavoidably follow, and we are as certain of it, as of our own Exiſtence, and of any thing without us anſwering to thoſe Impreſſions we feel within us, and as we are of thoſe Facts which he calls Phænomena. So that the Reaſoning *a priori* is in it ſelf as ſtrong and concluſive as that *a poſteriori*, and they have a ſtrict Connexion with each other; for by the Obſervation of the Facts we get an Idea of the Cauſe, and from the Nature of the Cauſe we judge concerning the Facts.

The manner in which this Subject ought to be treated. *Laſtly*, The Manner of treating this Subject, ought to be ſuch as the Dignity of it requires. *Wiſdom*, as our Saviour ſays, *will be juſtified of her Children.* Such Perſons only who have a Love

Luk. vii. v. 30.

and

and Concern for Truth, and are diligent and earneſt in the Purſuit of it, are able to find it out, and to vindicate it. Prejudice and Paſſion blind the Underſtanding, and vicious and corrupt Habits diſable the Powers and Faculties of the Mind; ſo that it can no more judge of Truth than a vitiated Eye can judge of Colours, or than Colours can be diſtinguiſhed through a falſe Medium. Truth is unalterable, and the Ways of finding it out certain; it is not to be made and unmade at Pleaſure, or diverſified according to the various Humours and Fancies of Men; it is univerſal, and all of a Piece. It is therefore our Part to enquire into the Truth and Reaſon of Things with Sincerity and Integrity, to lay the Foundation in what we are ſure cannot deceive us; in the eſſential Diffe-

rence betwixt Virtue and Vice, Right and Wrong, Good and Evil; in which we can no more be impoſed upon, than Light can be made appear to us as Darkneſs, or Bitter and Sweet have the ſame Taſte. And whatſoever we build upon this Foundation, will be as firm and unſhaken by all the Attacks of vicious and prophane Men, as a Houſe built upon a Rock is by Storms and Tempeſts.

Miſtakes owing to the not obſerving theſe Duties.

Had theſe Rules been obſerved, there would have been no occaſion for inventing abſurd Hypotheſes to explain any of the Phænomena of Nature. As *Truth* may be left to the ſtricteſt and moſt impartial Enquiry, without any Danger of its *being* or *appearing* like *Falſhood*, ſo the Syſtem of the World may be very ſafely committed to the cloſeſt and moſt curious Examination of the niceſt

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Enquirer, aſſiſted by all the Helps of Art and Nature; without fearing that any Part of it ſhould be below the Workmanſhip of its Creator, or caſt any unworthy Reflexion upon him. *Error* and *Irregularity* only, are aſhamed to appear in the Light, and muſt be ſupported by Art and Human Contrivances. *Here* there is many times need of Darkneſs, or of a falſe Light; *theſe* muſt be ſupported by Power or Intereſt, and the like, to gain them Reputation; But the Works of the Creation want no ſuch mean Artifices to recommend them to the Eſteem and Admiration of all that behold them. Nothing more is required, but to judge of them by the unerring Rules of Reaſon and Knowledge; and the nearer they are viewed, the more exactly they are compared together, ſo

much the more beautiful do they appear, and more nicely adjuſted to each other. In any other Method than this, they may ſeem diſordered and confuſed; In the ſame manner as in Human Arts and Sciences; to a Perſon who has no Skill in Building, who underſtands not the Rules of Architecture, the moſt regular and well contrived Edifice may ſeem diſproportionate, and without any Beauty; And by that Ear which has no Reliſh of Muſick, the moſt perfect Concord and Harmony may not be diſtinguiſhed. There are therefore ſome firſt and general Principles in every Art and Science, which it is neceſſary for thoſe to underſtand, who would improve themſelves in the Knowledge of them, or who would judge of the Skill of others; and if they are miſtaken in *theſe*, or if they apply the Rules of one Science to another,

another, to which they do not belong, the Faults they unjuſtly caſt upon it will return upon themſelves. Thus likewiſe there are general *Laws*, by which the Syſtem of the World is governed, which it is neceſſary for every one to underſtand, who would judge of the Order and Regularity of it; and from Mens Ignorance in, or Miſapplication of *theſe*, have ariſen all thoſe Objections which they themſelves have thought ſo ſtrong, and which they have endeavoured to anſwer in a different Way.

The Weakneſs of the Epicurean Arguments

This was the Caſe of the *Epicureans*, as is manifeſt by the Inſtances they gave. Their principal Objection of the Obliquity of the *Ecliptick* to the *Equator*, whereby the torrid *Zone* is rendred too hot, and the frigid *Zone* too cold for Men to inhabit; was owing to their Ignorance of thoſe Places and their

Inhabitants. Modern Diſcoveries in Geography fully anſwer this Objection, by ſhewing the Facts to be falſe. The Heat is not ſo exceſſive, even under the *Line*, but it can be very well born; nay, it is ſo tempered with continual Wind and Rain, as render it very agreeable. Beſides, the Sun's Motion in the *Ecliptick* (which near the *Equator* makes the greateſt Angle with it) is then ſo quick, compared with what it is in the *Tropicks*, that it is not full Two Months in moving *Twenty* of the *Seven and Forty* Degrees of Declination; ſo that it is but a very little while vertical; and, which ſtill diminiſhes its Heat, 'tis never more than Twelve Hours above the Horizon: And we have Inſtances of Perſons who have lived to as great an Age, as Men in cooler *Climates*. So likewiſe the greater

er Part of the frigid *Zone* is found to be habitable by *Men*, and the Produce of thoſe Places furniſhes both *them* and the Animals there, with Fences againſt the Extremity of the Cold. And if the *Epicureans* had conſidered the Effects of the Poſition of theſe Two Circles in any other Obliquity, they would have found much greater Inconveniences ariſing from the unequal Diſtribution of Light and Darkneſs, Heat and Cold; which in the preſent Situation are equally diſtributed upon the whole. Had the Obliquity been much *more* than it is now, the torrid Zone would have increaſed proportionably; and then the Heat and Drought might have been too great for Plants and Animals under the *Line*; and whilſt the Sun approached one *Pole*, thoſe Parts towards the other *Pole* would have been left in much

much greater Darkneſs, and longer Cold than now: And had the Obliquity been much leſs, the Heat would have been too near an Equality, ſo as to have deſtroyed the agreeable Seaſons of Spring and Summer, Autumn and Winter. If therefore we take in the whole Globe of Earth, and conſider it in its preſent State, we ſhall find that the Light and Heat is the moſt equally diſpenſed that it could be. The Inſtances of the Uſeleſneſs of a great Part of the Earth, as *Seas*, *Rocks*, *Heaths*, and the like; are all ſuch as ſhow only the Ignorance of the Objectors in thoſe Matters: As is plain by the late Diſcoveries in Navigation and Philoſophy, and ſhall be particularly made appear in its proper Place. At preſent this is ſufficient to ſhew how weakly they argued againſt

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the Maker and Governor of the World; by firſt ſuppoſing thoſe Things to be *evil* or *uſeleſs*, which are of the greateſt Benefit to Mankind in many reſpects, that they were wholly ignorant of, and then unjuſtly inferring from thence that they could not be created by a wiſe and good Being. The very Foundation of their Argument is falſe, and therefore what they conclude from it muſt neceſſarily be ſo too; Till Men know the Nature of the Thing, the ſeveral Ways it may be applied, and all the Ends and Purpoſes it may ſerve, it is unreaſonable to pronounce concerning it whether it be *good* or *evil*, and it is much more unreaſonable after a groundleſs Determination to reflect on the Author of it. Upon a nicer Enquiry ſuch Suppoſitions are found to be falſe, and the Reflections turn to the Shame

Shame and Confuſion of thoſe who make them.

The Weakneſs of the modern Objections.

Thus it is with the *Epicurean* Atheiſts of old; and thus it is likewiſe with thoſe who in later Ages have followed their Example. It is reported of a * certain King, who from his great Skill in Aſtronomy was ſtiled the *Wiſe* and the *Aſtrologer*, that he ſhould prophanely ſay, *If he had been with the Creator when he made the World, he could have taught him how to have made it better*. This Saying of his, was wholly owing to his Ignorance of the *true* Syſtem of the World; and has been fully anſwered ſince even to a Demonſtration. The *apparent* Motions and Bigneſſes of the Planets are very different from the *true* ones. Upon the former the ancient Aſtronomers built their Syſtems,

* *Alphonſus* X. King of *Leon* and *Caſtile*.

Syſtems, which are ſo perplexed and confuſed that they are ſcarce intelligible. They obſerved the Planets to be ſometimes nearer, and ſometimes further off; to have different *Phaſes*; to be ſometimes *progreſſive*, ſometimes *ſtationary*, and ſometimes *retrograde*. To ſolve theſe, and ſuch like Appearances, they invented various Hypotheſes. According to *ſome*, the Earth was the Center; and the Sun and Planets, together with all the fixed Stars, revolved about it every Day; And *others* would have *ſome* of the Planets move about the Sun, which ſhould carry them along with it about the Earth. To account for all theſe *ſeeming* Irregularities, they were forced to have recourſe to *Excentrics*, *Epicycles*, and *Epicycles* upon *Epicycles*, and the like; and with regard to *theſe* it was without all

all doubt, that the forementioned Aſtronomer ſpake; And had *theſe* been the true Syſtem of the World, it would have been extremely difficult to have ſhewn the Wiſdom or Contrivance of it; For according to *them*, there is no *Proportion* obſerved, no *Adjuſtment* of the Magnitude and Diſtance of the reſpective Bodies, nor any regular *Curves* in which they are moved; but the great Bodies move about the leſſer ones with the ſame Indifference as *Theſe* would do about *Them*. But this is ſo far from being the Truth, that, as the Prophet eloquently expreſſes it, *Iſaiah* 40. *v.* 12. *God hath meaſured the Waters in the Hollow of his Hand, and hath meted out Heaven with a Span, and comprehended the Duſt of the Earth in a Meaſure, and weighed the Mountains in Scales, and the Hills in a Balance.* The Diſtances of

of all the heavenly Bodies from their *reſpective* Centers of Gravity, about which any particular Number of them move, and from the common Center of Gravity of them all, are moſt exactly in *reciprocal* Proportion to the *Quantity* of Matter contained in each of them; whence they are in perfect *Equilibrium*; and conſequently by the mere Continuance of the general Laws of Nature, when once put in Motion, they will revolve in regular Figures about their common Center of Gravity and about each other. From hence ariſe their different Appearances and *ſeeming* Irregularities; when at the ſame Time they go on uniformly in their ſtated Courſe. Thus, when any Planet *ſeems* to be *ſtationary* or *retrogade*, it does in *reality* proceed on in its Orbit; and it is owing to our Poſition only, that it appears

appears otherwiſe. As ſhall be fully explained when we come to conſider the *real* Motions of them, and the *Laws* by which they are governed. There was therefore no need of thoſe forementioned Inventions to explain the Phænomena of Nature. And thoſe Perſons who complained of the *Laws* of the Creation, complained only of *Laws* of their own making, which are no where to be found in Nature; and the Abſurdity of which, they muſt anſwer for themſelves.

With Reſpect to the moral World.

And the ſame will be found to be true likewiſe of the moral World, the ſeveral Parts of which are as exactly adjuſted and proportioned to each other as thoſe of the natural World. *Truth* is as agreeable to the Underſtanding, as *Light* is to the Eye; and *Vertue* is as beautiful to the Mind, as any

material

material Object is to the Sight. And every *Senſe* belonging to the *Body*, has alſo its proper *Object*, which is duly calculated to it; and in a right Application of which, conſiſts its greateſt Enjoyment. If therefore we diligently examine into the Nature of the *Mind* and of the *Body*, the ſeveral Faculty's and Powers of each of them, their Diſpoſitions and Inclinations, what the proper Objects of them are, in what Manner they are to be applyed, and what is the Rule and Meaſure of Action; we ſhall find *this* alſo is a very regular and well-contrived Syſtem, and that there is no more Need of the Hypotheſes and Fictions of learned Men to account for the *Irregularities* and *moral Evils* of Mankind, than there was of *Excentricks* and *Epicycles* to explain the *Motions* of the heavenly Bo-

dies. Such Hypotheſes for the moſt part diſhonour the Creation; but a ſtrict Enquiry into the *Laws* of it, always ſhews the Wiſdom of the Creator more and more. We need not therefore to fear but in this Reſpect alſo God will juſtifie himſelf, and that the Wickedneſs which is committed amongſt Men can be no Way charged upon Him. And thus the Prophet *Iſaiah* affirms in Oppoſition to ſuch Hypotheſes, that God alone is the *Original* and *Author* of all things, and that He will vindicate Himſelf in the Creation and Government of them; *ch.* XLV. *v.* 7. *I form the Light, and create Darkneſs, I make Peace and create Evil, I the Lord do all theſe Things.* And *Prov.* 16. *v.* 4. *The Lord hath made all Things for himſelf,* (or as it ſhould have been rendred; hath

hath ſuited Things to each other,) *yea even the Wicked for the Day of Evil*; that is, God hath made all Things *correſponding* to one another, hath exactly fitted and proportioned them, yea even the Puniſhment of evil Men according to their Deſerts.

The Weakneſs of the Hypotheſis of two Original Principles.

But before I come to explain this in Particulars, it will be neceſſary to conſider That antient Hypotheſis lately revived, of two *Original* Principles; the one the Author of all *Evil*, and the other the Author of all *Good*; and to ſhow that notwithſtanding the boaſted Excellency of it, it is a very abſurd and contradictory Suppoſition, ſuch as cannot exiſt in Nature, and will by no Means ſolve the preſent Phænomena. And this I ſhall do by examining

First, What Sort of an *Idea* That is, of an infinite, independent, neceſſary *evil* Being. And then, *Secondly*, I ſhall make it appear, that the very Suppoſition of the Exiſtence of ſuch a Being, is an expreſs and direct Contradiction to the Exiſtence of an infinite, independent, neceſſarily Good Being: And that therefore we are as certain that this is not a true Account of the Original of Things, as we are of the common Principles of all Knowledge: And that not * to allow of arguing thus from the moſt ſimple and clear Idea's of our Minds, is to deny the eternal and neceſſary Relations of Things, even the ſame in Effect as to ſay there is no Difference betwixt a Square and a Circle

* As Mr. *Baile* does in the forecited Place, in theſe Words: Les Idées les plus ſûres et les plus claires de l'ordre, nous ſaprenent, *&c. Manicheens, Remark* D.

a Circle, betwixt twice two and seven. *S. Clarke : Boyle Lect.*

If an *Evil Principle* be allowed at all, it must exist of it self absolutely independent of the *good Principle*; because 'tis supposed that they are equal, and share alike in the Government of the World; and because, if the *one* were superiour to the *other*, it would certainly prevail, and not suffer *That other* to act in direct Opposition to it. Wherefore the Defenders of this Scheme are so far consistent with themselves as to assert, that the *evil Principle* is infinite and independent, and in every thing opposes the Designs of the *good Principle*: But they do not define their Terms, nor tell us what Sort of an Idea That of *infinite Evil* is, nor how it can be applyed to such a Being. All *Evil* supposes *Understanding* and

The Absurdity of two Original independent Principles.

Power and *Liberty* of acting; because it is the Consequence or Effect, either of the *Neglect* or *Abuse* of one or more of *these*. For in the *Imperfection* or *Want* of them it cannot be supposed by these Men to consist; because an Understanding infinitely *imperfect*, or an infinite *Want* of *Understanding*, is no *Understanding* at all: And the same may be affirmed of *Power* and *Liberty* and the like. Their first Principle therefore must be endued with infinite *Knowledge* and *Power*, and with perfect *Liberty* of acting; and how does this agree to the Notion any one has of an infinite *evil Being?* Can *Knowledge* and *Power* and *Liberty* in any Propriety of Speech be called *evil*, much less the highest Degree and most universal Extent of them? With Respect to *these* therefore absolutely considered, such

ſuch a Being cannot be ſtyled *evil*, becauſe He is endued with ſuch Powers and Faculties as are not *evil* in themſelves. It remains therefore that the *evil* muſt conſiſt in the *Abuſe* or *Miſapplication* of theſe Powers and Faculties; either in not *knowing* what is fitteſt and beſt to be done; or elſe in not being *able* to do that which Wiſdom directs; or elſe in having ſome *Temptation* or *Intereſt* to the contrary. For theſe are the only Cauſes of any Being's acting contrary to what is juſt and right. Let us try to apply theſe to the ſuppoſed infinitely *evil Principle*, and ſee how well they will agree with it. Can we imagin that infinite *Knowledge* can be impoſed upon or deceived? that it ſhould not be intimately acquainted with the Nature and Reaſon of Things, their eſſential Differences, what the

Conſequences and Effects of the diverſe Application of them will be, what they are in different Circumſtances capable of, and what are the proper Means to obtain the reſpective Ends? So that in this Particular there is no room for *Evil*; for Knowledge and wiſdom are the moſt perfect and compleat in ſuch a Being. If to *this* we add infinite Power; the Object of which, is every Thing that is poſſible to be done, and which cannot be reſiſted nor controuled by any Force whatſoever; it cannot be, but that the Being in whom *theſe* reſide, muſt exerciſe this Power according to the unerring Rules of that perfect Knowledge He is endued with.

Again, with Regard to *Liberty*, there can be nothing from *within* or from *without*, to induce ſuch a Being to act contrary to Goodneſs and Truth; no *evil* Diſpoſition or Inclination; becauſe the neceſ-

ſary

ſary Reſult of his own Perfections is infinite Happineſs to himſelf, a perfect *Rectitude* of Will, and conſequently no Motive either to make any Creatures that are *evil*, or to commit any *Evil* towards them; neither can he have any Temptation from other Beings to do *Evil*, becauſe all ſuch Temptations manifeſtly ariſe from *Weakneſs* or *Depravation*, which are contradictory to All-ſufficiency.

Whether therefore we conſider the *firſt Principle* with Regard to its *natural* or *moral* Powers, the Abſurdity of its being infinitely *Evil* evidently appears: it is at firſt Sight a confuſed Jumble of Ideas, an abſurd Mixture of Perfections and Imperfections, of Powers and Wants, of Excellencies and Depravations, all in one Subject; and which, conſidered ſingly, are abſolutely inconſiſtent with and contradictory to each other.

But

The Ideas of two such Principles contradictory to each other.

But that which shows the Absurdity of this Hypothesis still further, is the utter Impossibility of conceiving two necessary independent Beings at all; it is an express Contradiction in the very Terms, and the Ideas destroy each other. The Idea which every one has of *Necessity* is a plain, simple, uniform Idea, which supposes Unity, Immensity, Eternity and the like: And if we attempt any Way to diversify it, to make any Change or Alteration in it, if we try to multiply it or to confine it to any particular Time or Place, it immediately vanishes. Thus for Instance, to suppose *two* necessary independent Beings, is to suppose *neither* of them to be necessary; because *either* of them being absolutely independent on the other, might have existed without that other, and consequently

quently we can conceive *either* of them to be abſent, which is directly contrary to the firſt Suppoſition of its being neceſſarily exiſting. So alſo with Regard to the eſſential Properties of ſuch a Being, for Inſtance *Immenſity*; the neceſſary exiſting Being muſt be *every where*; and the very ſuppoſing Him to be abſent from any one Place, deſtroys his neceſſarily exiſting at all. For if we can conceive Him not to be, in any *particular* Place; we can as well conceive Him not to be in any *other* particular Place; or in *any* Place at all. And the ſame holds true with Reſpect to *Duration*: Whatever can be ſuppoſed not to exiſt at any *one* Time, may as well be ſuppoſed not to exiſt at any *other* Time, and by the ſame Reaſon not to exiſt *at all*, which is a

flat

flat Contradiction to the Idea of neceſſary Exiſtence. There can therefore be but one firſt *Principle*, the *Original* and *Cauſe* of all Things that are, a Self-exiſtent Being, who is eternal, immenſe, all-wiſe and all-powerful, infinitey good and happy. As has been at large, and in every Particular, demonſtrated by *others* in the Courſe of theſe Lectures.

The Difficulty of judging of the Goodneſs of the Syſtem of the World.

The whole Syſtem of the World was at firſt created, and is ſtill governed by this Being, who is every where preſent, ſees the Nature and Eſſence of all Things, knows their Powers and Faculties, and what Ends and Purpoſes they will beſt ſerve. So that if we would judge aright concerning any Part of the Creation, we ought to do it by ſuch Rules as are conſiſtent with the known and certain Perfections of the Deity; And ſince it

it is demonſtrable that it is the Effect of Wiſdom and Goodneſs, we ſhould endeavour to reconcile it to them. Thus in the preſent Inquiry concerning the original of *Evil*, we ought firſt to conſider *what* it is we call *Evil*, which perhaps may be very *improperly* ſo called; Whether it does not ariſe from the Imperfection of our own Underſtandings, who preſume to condemn what we have not a perfect Knowledge of. In the ordinary Works of humane Art and Contrivance, we ſee how difficult it is to account for any particular Part of it, without knowing the whole Compoſition of it. As in a Clock or a Watch; He who ſhould go about to condemn the Shape or Uſe of any particular Wheel, the Situation or Deſign of which was not at all underſtood by Him; it would but diſcover his own Ignorance,

norance, and not at all reflect upon the Workman. We need not therefore be ſurpriſed, if in our Survey of the Univerſe, we be often at a Loſs how to account for many things that we obſerve there. Many Parts of it are wholy out of our Reach; as may juſtly be inferred from the Multitude of fixed Stars perpetually diſcovered by Teleſcopes, as they are improved in Goodneſs. Other Parts we know very little more of than their bare Exiſtence; as, of the neareſt of thoſe Stars, that they are fixed and luminous Bodies. Other Parts, as they approach nearer to us, we know ſomething more of; and by Obſervation and Analogy, judge them to be of the ſame Species with this Earth which we inhabit. Such are the *Planets*. But amongſt theſe is a very numerous Syſtem of *Comets*, the Nature and

and Uſe of which we are in a great Meaſure ignorant of. And of thoſe Parts which are neareſt of all to us, even our own Globe, how little is it that we know of it? We live upon the Superficies, and cannot tell what is contained within the Bowels of it, for many thouſand Miles; Nay even upon this Superficies, there are whole Species of Creatures, which it will be difficult to us to determine what Purpoſes they ſerve. And we find by the Improvements of Microſcopes, that Nature knows no End in *Smallneſs* as well as in *Greatneſs*, from the Multitude of minute Animals which every where appear. To be able therefore to pronounce peremptorily concerning ſuch a Syſtem as this, requires to be every where preſent in it, to be able to underſtand and connect every

Part

Part of it, and to ſee the *Fitneſs* and *Adjuſtment* of the whole: Which the wiſeſt and moſt ſagacious of Men are ſo far from being able to do, that we can ſcarce conceive it of any created Being of the higheſt Rank or Station. *Acts* xv. *v.* 18. *Known unto God Alone* ſeem *all his Works*, in This Senſe, to be *from the Beginning of the World* to the End thereof. But though we cannot underſtand the whole of the Creation of God, yet this does not hinder, but we may underſtand a great deal of it; enough to ſerve all the Purpoſes of this preſent Life; enough for us to judge in general of the Power and Wiſdom and Goodneſs of the Maker and Governour of it; and what our Demeanour towards Him and towards one another ought to be. By that little which we do know,

we

we ought to determin econcerning other Things which we are not ſo certain of, and have not the Means of being acquainted with; and not immediately to condemn them as *uſeleſs* or *evil* becauſe we are ignorant of the *Good* or *Service* that they do This is the Method we take in judging of human Arts and Compoſitions; and ſo ought we to do in the Works of Nature. Upon the firſt Examination of the Structure of the Bodies of Men and Animals, there were many Parts, which to the curious appeared *inconvenient* or *uſeleſs*; but afterwards upon ſtricter Enquiry, or upon depriving them of thoſe Parts, they were found to be of great Service; And continual Improvements of the ſame Kind have demonſtrated the Animal Body to be ſo far from being *ill* contrived, that it is the

moſt ſurpriſingly curious and exact.

The true Method of judging of the Goodneſs of the Syſtem of the World.

In the ſame Method ought we to go, in forming our Judgment concerning all other parts of the Creation. They appear at firſt Sight to be *good* and *uſeful* in ſome Reſpects; and in thoſe reſpects wherein they appear otherwiſe, we ſhould ſuſpend our Thoughts till we have ſearched more narrowly into them. There is Room for perpetual Study, and new Scenes of Knowledge continually open to us. If therefore we would acquit our ſelves as ſincere and impartial Enquirers after Truth, and expect to find any Satisfaction in what we do; we muſt be content with that Meaſure of Underſtanding which God has given us, and apply it in ſuch a Manner as He intended; and not blame either *it* or the *Objects* of it, any more than we do our Eyes,

becauſe

becauſe we cannot diſtinctly ſee what is in every one of the Planets; or thoſe Planets, becauſe they are ſo far removed from us.

This Method we naturally proceed in, with Reſpect to the common Arts and Sciences amongſt Men. We judge of the Knowledge and Skill of the Workman by his Performances; or by what we experience of his Skill, we judge what is likely to be the Effect of it: And *theſe* mutually aſſiſt each other. So likewiſe in the Syſtem of the World, or the whole Frame of Nature; we know that a Being infinitely wiſe, all-powerful and good, cannot be the Author of any Thing, but what is worthy of thoſe Perfections to create. And conſequently, ſince every Thing that *is*, was made by Him, it muſt be *very Good*;

that is, fit for that End and Purpose, for which it was designed. Again, on the other Hand; From observing the *Goodness* and *Excellency* of *some* Parts of the Creation, which are so obvious that we cannot help seeing them, we come to form a general Judgment of the *Wisdom* and *Goodness* of the Creator in *other* Things, the immediate Use or Benefit of which to the whole, is not so manifest. Each of *these*, are assisting to the *other*, and will at last prove coincident. It is therefore a very good Argument *a priori*, the Force of which no Fatalist can avoid; that *as* sure as we are of infinite Intelligence, Power and Goodness, and that the Universe could not be the Effect of mere Chance or Necessity, (all which have been fully and clearly demonstrated by Others in the Course of

these

theſe Lectures;) *ſo* ſure are we that every Thing created by ſuch a Being, muſt be worthy of thoſe Perfections; and that all Arguments to the contrary, drawn from the ſeeming *Evil* or *Irregularity* of ſome Parts conſidered ſingly or with ſome private View, are only Arguments *ad Ignorantiam*. This may be a general Satisfaction; and we muſt in many Things be forced to acquieſce in it, unleſs we could hope to have Underſtanding enough to comprehend at once all the Parts of the Univerſe, and ſee the *End* for which they were intended, and the exact *Subſerviency* of every one of them to it.

This Difficulty, no Reaſon why we ſhould not particularly enquire into the Nature of it.

But this hinders not, but that under this general Apprehenſion we may with Modeſty and a good Intention enquire into the Works of the Creation, and

throughly examine and consider those Parts of it especially, which seem to cast a Shadow upon the Lustre of the whole, and to eclipse the Beauty of it. And by so doing, we shall find that such Enquiries will either vindicate the Laws of the Creation, or else convince us that the Defect lies in Our Understandings, and not in the Nature or Constitution of the Things themselves. Wherefore before we can pronounce concerning any Thing, that it is really *Evil*; we ought to consider what it is we mean by *Evil*, and wherein it consists.

What is meant by Evil

Evil is a relative Term, and either regards the *Being it self*, which is so styled, or it refers to some *other Beings* with whom it is connected, or else it respects the *Author* by whom it is made. With

Regard

Regard to the Being it ſelf, * there is a private *Uſe* or *Good*, ſome *End* or *Aim* to be ſerved by it; for which it is naturally and originally conſtituted; towards which, it regularly moves; and to promote which, its *Powers* or *Faculties* moſt eaſily tend. If there be any Thing in ſuch a Being which is not conducive to this *End*, but, on the contrary, hinders the attaining of it; that is, if the Conſtitution of it be diſturbed, or the Powers and Faculties of it not permitted to exert themſelves and produce their genuine Effects; ſuch a Being is ſo far *ill* to its Self, is in an unnatural and uneaſy State. And becauſe there is no ſuch Thing as any finite Being exiſting *alone* and *independent* of all others; but there

* Πᾶσα τέχνη καὶ πᾶσα μέθοδος, ὁμοίως δὲ πρᾶξίς τε καὶ προαίρεσις, ἀγαθοῦ τινος ἐφίεσθαι δοκεῖ. *Ariſtot. Eth. in Principio.*

is a Connection and Relation which they have to each other; whereby a *Syſtem* is compoſed, which has a general *End* or *Good* to which every one of the Parts has a natural Tendency in its proper Place: Whatever Being diſturbs the Order and Harmony of ſuch a Syſtem, That Being is *evil* with Reſpect to *others*, is ill affected and injurious to them. With Regard to the *Author* and Contriver of ſuch a Syſtem, it cannot be ſtyled *evil* in any other Senſe, than as it is unworthy of ſuch an Author, below the Wiſdom and Goodneſs of ſuch a Being to create it: For the *Syſtem* is ſuppoſed to be as compleat as in the Nature of Things it can be, and to have no Reference to any Thing elſe; and there is really no ſuch Thing as *Evil* at all, *abſtractly* conſidered. Having thus determined

mined what is meant by *Evil*; all the *Evils* that are, may be diſtinguiſhed into theſe three Sorts: Diviſio.

Firſt, All *Wants* and *Imperfections* in our ſelves, or the Things about us, the either not having, or not having to that Degree which other Beings have, certain Powers, Faculties and Excellencies; or elſe the *Weakneſs* of thoſe Laws by which the material World is at preſent governed, compared with more *perfect* ones of which it is capable. 74.

Secondly. All *natural Evils*, ſuch as *Diſeaſes*, *Pain*, *Death*, and the like; which Men and all other Creatures are incident to; 233. And all kind of Diſorders and Irregularities in the Things without us, as Storms, Tempeſts, Earthquakes, *&c.* And

Thirdly,

Thirdly, Moral Evil, or all thoſe *Sins* and *Vices* which we ſee committed by Men every Day, and which render them ſo corrupt and miſerable. *Elsewhere.*

Theſe Particulars take in the whole of what can in Any ſenſe be called *Evil*; and comprehend all the *Objections* that have been at any Time made againſt the Conſtitution and Government of the World.

Of the Evil of Imperfection.

1. *Firſt*, I ſhall conſider thoſe *Wants* and *Imperfections* which we experience within our Selves, compared with Other Beings of ſuperiour Rank, who either have *Powers* and *Faculties* which we have not; or elſe have thoſe that are in common with us, to a much greater Degree and Perfection: And alſo the *Weakneſs* of thoſe Laws, by which the *material* World is at preſent governed, compared with more

more *perfect* ones which it is capable of. And I ſhall ſhow that there is no juſt Ground of Complaint in theſe Reſpects.

What Knowledge is requiſite to judge of ſuch Imperfection.

Before we can form any Judgment of the *Perfection* or *Imperfection* of any Part of the Creation, whether *animate* or *inanimate*; we muſt underſtand what Powers and Faculties it is endued with, what Laws it is ſubject to, and what is the Effect of the right Uſe or Application of them; For without ſuch Knowledge we can have no juſt Idea of the Being it ſelf, of what Uſe it is in the World, nor wherein the *good* or *evil* of it conſiſts. Thus for Inſtance, whoever would pretend to judge of the Excellency of the *planetary Syſtem*, ought to have a particular Knowledge of the Conſtitution and Laws of it; the Bigneſs, Diſtance and Situation of thoſe Bodies, with

with Reſpect to one another; the Laws of Motion, and the Curves in which they are directed: From a due comparing of all which together, it will be manifeſt whether there be any Uniformity, Proportion or Order, obſerved amongſt them or not. And the ſame holds true in any *One* of thoſe Bodies, ſuppoſe this Earth: We muſt be acquainted with its Diſtance from the Sun, the Obliquity of its Axis to the Plain of the Ecliptick, the Properties of the annual Orb in which it moves, and its Rotation about its own Axis, in Order to ſee the Contrivance of it, by which are produced the ſeveral Climates, and the Succeſſion of Day and Night, Summer and Winter, Seed-time and Harveſt. And ſo likewiſe muſt we proceed in the Conſideration of the particular Parts of it, as the Mountains, Seas,

Deſarts

Deſarts and the like, or of any of the Inhabitants of them. Of theſe latter, *Man* is the principal: Who as He is compoſed of Soul and Body, the *One* Immaterial, endued with *Thought*, *Reaſon*, *Liberty* and the like; the *other Material*, endued with different *Powers* and Organs of *Senſe*; ſo it is abſolutely neceſſary to have a diſtinct Knowledge of the Nature and Extent of *theſe*, and their mutual Influence on each other, before we can tell wherein the *Perfection* of Man conſiſts, or wherein he may be ſaid to be *defective*.

The true Method of ſuch Enquiry.

It is therefore in theſe kind of Inquiries, as it is in *Mathematicks*. There are two Ways of coming at the Truth, the one *Synthetick*, and the other *Analytick*. To this latter Method we owe all the Improvements that have been made in natural Philoſophy of late Years,

Years, which will furniſh us with Anſwers to every material Objection that has been made againſt the Syſtem of the World. This *Analytick* Method conſiſts in making a great Number of Experiments and Obſervations, ſufficient to inable us to draw ſome *general* Concluſion from them. Thus in the forementioned Inſtances, by a large Induction of Particulars we may proceed from * Compounds to the ſimple Ingredients *of which they conſiſt*; *from conſidering the particular Motions, to the finding out the Forces that are neceſſary to generate them*; *and in general, from Effects we may go to Cauſes*; *and the more univerſal the Effects are, ſo*

* Hac *Analyſi* licebit, ex rebus compoſitis ratiocinatione colligere Simplices; ex motibus, vires moventes; & in univerſum, ex effectis cauſas; ex cauſiſq; particularibus generales; donec ad generaliſſimas tandem ſit deventum, *Newt. Optices. Edit. Sec. p.* 413.

ſo much the more univerſal muſt the Cauſe be, till at laſt it ends in the moſt general that can be. It is very true, that this is not a ſtrict *Demonſtration* of the general Concluſion; becauſe That can be had no other Way than by trying all the Experiments that can poſſibly be made every where, which is infinite and endleſs; but it is the beſt that the Nature of the Thing is capable of, and ought to be ſatisfactory, if there be no one Inſtance found to the contrary. Thus by continual Experience and Obſervation we find all the *Parts* of Matter we are converſant with, to be *extended*, *moveable* and *impenetrable*. And theſe being obvious Properties, and no ſingle Objection againſt them; we juſtly conclude that *this* may be affirmed of all the *Parts* of which the vvhole Earth is compoſed; and from

from thence by *Analogy* conclude the ſame of the heavenly Bodies, and of all *Matter* in general. And ſo likewiſe concerning any *particular Law* of Motion that Matter is ſubject to: There are numberleſs Experiments which convince us that Bodies are *heavy*, or tend towards each other with a certain determinate Force. This ſufficiently appears from the different *Weight* of ſuch Bodies: And there being no Inſtance to the contrary in ſo often repeated Tryals, we reaſonably infer that this is true in all other Places of the Earth as well as here. And becauſe it is found to be in a certain *Proportion* to the *Diſtance* and *Quantity* of Matter, we apply it alſo to the heavenly Bodies; and lay it down as a *general* Law, that All Bodies whatſoever *gravitate* towards each other. This is the only Method

we

we have of coming to the Knowledge of the Nature and Constitution of Things, by Reasons *a posteriori*, and Observations of the Effects, in Order to find out some simple and universal Causes or Laws; and then by Arguments *a priori*, or from such known and established Causes, to collect particular Effects in such Cases where we have no Means or Opportunity of making the Experiments.

The Difference betwixt this Method and that of the antient Philosophers.

And this is very different from the Method of the *Epicureans* and *Peripateticks*: The *former* of which endeavoured to explain the System of Nature by *Hypotheses* which were only Fictions of their own Mind, and had no Foundation in the *Nature* of Things, nor were of any Use in, nor could they be proved by experimental

Philoſophy; The *latter* attempted to ſolve the ſame Phænomena, by aſcribing to every *Species* of Things, ſome *ſpecifick* or *occult Qualities*, upon which the Actions of all Bodies depended, in a *Manner* wholly unknown to them. And if any one asked whence any particular Effects proceeded, as ſuppoſe, what is the *Cauſe* of *Gravitation* or *Electricity*; it was thought a ſufficient Anſwer to ſay, that it aroſe from the *Nature* of the Body; or from a particular *Quality* that lay hid in it, without ſo much as attempting to explain what that *Nature* and *Quality* was. This is indeed to put *Names* inſtead of *Things*, and to amuſe Mankind with a *Shadow* of Knowledge, which leads them into Obſcurity and Error, inſtead of Light and Truth. Whereas on the contrary, if from the *Phænomena* we

are able to derive ſome few *general* Laws or Principles, which are not *hidden* and *occult*, but manifeſt and obvious *Qualities*, (though perhaps the *Cauſes* of ſuch Qualities may be wholy unknown;) and from theſe Principles endeavour to explain the Actions and Properties of *corporeal* Things: This is to go in a rational Way, and is the only *one* that can give us any true Satisfaction, and by which we can make any real Improvement in explaining the Wiſdom of the Creation. Having premiſed this in general, to ſhow what *Method* we ought to proceed in, and what is reaſonable to be expected in Enquiries of this Nature: 150.

I come now to conſider particularly wherein the *Evil* of *Imperfection* conſiſts; and That in the following Reſpects. *First*, with Regard to *corporeal* Things and the *Wherein the Evil of Imperfection conſiſts.*

Laws they are ſubject to. *Secondly*, with Regard to *animal Creatures* and the *Powers* they are endued with. And *Thirdly*, with Regard to *Men*, and the *Faculties* peculiar to Them. Strictly and properly ſpeaking, there can be no ſuch Thing as *Perfection* any where but in God, who is immenſe, eternal, omnipotent, allwiſe and good. All other Beings, of how high a Rank or Station ſo ever, are but dependant and limited Beings; They owe their Original and all that they poſſeſs, to the ſupreme Being; who as He gave them *it* out of his own Will and good Pleaſure, ſo He can deprive them of *it* again when He ſees fit. Whenever therefore we ſpeak of *Perfection* and *Imperfection* with Reſpect to finite and created Beings, we mean only in a *relative* Senſe, compared one with another: So that the

the *Evil* of *Imperfection* is not properly any *Evil* at all, but the *neceſſary* Conſequence of being *finite* and *dependant*. And the Objection holds equally againſt all created Beings whatſoever; it not being poſſible to ſuppoſe any Beings, of how high a Rank ſoever, but there may be conceived Others ſtill higher, with Reſpect to whom they may be more *imperfect*: So that either there ought to have been no created Beings at all, or elſe the *Evil of Imperfection* will unavoidably follow. And hence ariſes the different State and Condition of all *created* Beings. God Almighty is infinitely Happy in the Enjoyment of his own unſpeakable Perfections; nothing can add to, or diminiſh from his Happineſs; ſo that with Reſpect to *that*, it is all one whether any other Beings had exiſted or no; *They*

can contribute nothing towards it; it is of his good Pleasure only, that they are and were created. The whole of *this* therefore, must be resolved into the divine Will. Infinite Understanding *knows* all the *Things* that are possible to be done, all the infinite Variety of Creatures that can be made, what they are capable of and subject to. Omnipotence can do all that can be done, can create any or all, at any Time and in any Place, of those Variety of Creatures. And infinite Wisdom can judge of the Kind, of the Number, of the Time, Place, Duration and all other Circumstances relating to them. With Respect to the supreme Being therefore, we may concerning *These* affirm with *Moses*, *Gen.* I. that *behold they are all very good*, that is, fitted for

for thoſe Ends and Purpoſes intended by the Creator.

Thus, to begin with the inferior Part of the Creation. Let us conſider the *Nature* of *material* Things, and the *Laws* they are capable of. *Space* is infinite and boundleſs, and conſequently can contain Variety of all Kinds of Beings; *Matter* is finite and limited, and there is a greater Quantity of it in ſome Places than in others of the ſame Dimenſions, as is evident from their different Weight; Whence it follows that Space is *neceſſary*, in the ſame Manner as *Time* or *Duration* is *neceſſary*; And the very Suppoſition of its Abſence is a Contradiction; For let any one fix in his Mind a particular Part of Space, ſuppoſe a Cubick Foot, and then try to imagine its Abſence. This will be a Cubick Foot of Nothing; which

The Imperfection of the material Part of the Creation in general.

is an expreſs Contradiction, becauſe nothing has no Properties, and conſequently no Dimenſions. Wherefore there muſt neceſſarily be ſome *Subject* actually exiſting without us, to which theſe Relations belong. But this cannot be affirmed of *Matter:* For *as* That is actually abſent from ſome Places, *ſo* it might have been abſent from all; Its Exiſtance therefore is not neceſſary, but depends upon the Will of the Supreme Being. And the ſame may be ſaid alſo of its *Quantity:* As it does not fill all Space, it might have been *more* or *leſs*; and there can be no other Reaſon aſſigned for this determinate Meaſure of it, but only the mere Will of him that created it. The Exiſtance of *only* this particular Quantity of Matter, cannot be called *Evil*; Becauſe it is not at all inconſiſtent with the Notions

we

we have of infinite *Power* and *Wiſdom*, to create *any* of all the poſſible Things that are the Objects of ſuch *Power* and *Wiſdom*; and becauſe there is no Objection againſt this particular Quantity, but what will hold equally againſt any other Quantity.

The Imperfection of the particular Qualities of Matter.

After ſuch Creation, the next Thing to be conſidered is the *Powers* or *Qualities* of ſuch *Matter*. It is in it ſelf merely *paſſive*, that is, indifferent either as to *Reſt* or *Motion*: It will continue in *either* of thoſe States, by receiving Motion in Proportion to the *Force* that impreſſes it, and reſiſt as much as it is reſiſted. This *Principle* ſuppoſes nothing but *Exiſtance*; Nothing more is required than the preſerving it in Being, and it is a neceſſary Conſequence. But by this *paſſive* Principle alone, Bodies could never have been put into

into Motion: Some *active* Principle was neceſſary in Order to begin ſuch Motion: And if the *Quantity* of it varies, or the *Determination* of it be altered, ſuch *active Principle* is neceſſary in Order to effect thoſe Changes. Hence it follows, that as *Matter* is capable of *Motion*, and there are infinite *Degrees* of Velocity, and infinitely various Determinations of ſuch Velocity, in every *Moment* of Time and every *Point* of Space; it muſt be ſubject to have any *particular Laws* impreſſed upon it, according to the Will of Him who governs it; None of which *Laws* can properly be ſtyled *Evil.* but in their own Nature perfectly *indifferent.*

The Imperfection of thoſe Laws of Motion which Matter is ſubject to.

So likewiſe when we conſider *Matter*, not as one uniform *Subſtance*, whoſe Parts are neceſſarily connected with each other; but as

as conſiſting of an infinite Number of Particles, which are all diſtinct Subſtances, and actually ſeparated and independant of each other; It is manifeſt, that ſuch Particles, may be of very different *Magnitudes* and *Shapes*; their *Order* and *Poſition* may alſo be as different; The neceſſary Reſult of which, will be various Compoſitions, ariſing from ſuch Textures: Every *One* of which Compoſitions was originally intended by Him who formed it, and conſequently is merely arbitrary, and to be reſolved into his Will.

Hence the Phænomena of the material World are in general accounted for.

Theſe and ſuch like Conſiderations will help us to account for the Appearances of the *material* World; and convince us that thoſe Things which have been thought *Ill* or *Irregular* in it, are ſuch *Imperfections* only, as are eſſentially in the *Nature* of the Things them-

themſelves, and the neceſſary Reſult of thoſe Laws they are ſubject to: As will be evident from a particular View of them. *Space* is infinite and boundleſs, capable of receiving numberleſs *Syſtems* of all poſſible Kinds; But whether *all* ſuch are actually created or no, we know not; Great *Variety* we have Reaſon to think there are, from the *Analogy* of the fixed Stars to the Sun, of which we ſee no End: And they ſhining by their own Light, and being at ſuch vaſt Diſtances from each other, ſeem to be Centers about which planetary Bodies revolve, whoſe reflected Light is too faint to reach our Eye. About *theſe* therefore we have very little more than Conjecture; But concerning *this Syſtem* in which we bear a Part, we have Means of knowing enough to judge of the Excellen-

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cy and Perfection of it. That determinate *Quantity* of *Space* which the heavenly Bodies poſſeſs, as alſo That determinate *Quantity* of *Matter* of which they are compoſed; the *Diviſion* of it into ſuch a particular *Number* of Bodies, the placing them at ſuch *Diſtances*, and the impreſſing ſuch *Laws* of Motion upon them; are originally the manifeſt Effect of *Choice* and not of *Neceſſity*; For *that* admits of no *Variation*; and in the Nature of the Things themſelves, there can be no Reaſon of preferring one to the other. But as the ſupreme Being has an abſolute Right to create all Sorts of Creatures, and propoſes ſuch a *particular End* or *Perfection* in each of them: If every Thing be the moſt conducive poſſible to *That*, 'tis very unreaſonable to call it *ill*, when it is the natural and genuine Effect of

thoſe

thoſe Laws which the Things are ſubject to.

And of the planetary Syſtem in particular.

Thus it appears by Obſervation, that there are but *ſix* Planets belonging to this Sun; Againſt which Number there can be no Objection made, but what will affect any other Number, it being merely indifferent in it Self; And perhaps in other Syſtems there are different Numbers, and ſo there may have been or may yet be in *this*. By Obſervation likewiſe it appears what *particular* Laws of Motion theſe Bodies are ſubject to; That they not only move about the Sun, but that their *periodical Times* are in a '*ſeſqui-alterate*' Proportion of their *Diſtances*; that is, the *Squares* of their *periodical Times* are as the *Cubes* of their *Diſtances*. This Proportion is the neceſſary Reſult of that *Law* of Gravity, to which the *material Syſtem* is at preſent

preſent Subject; Which *Law* is evidently not *eſſential* to Matter, but originally is the mere Effect of Choice; which poſſibly extends not to other Syſtems, and may not for ever be the Rule in this. And there can be no Complaint made of it, but would have been made for the ſame Reaſon againſt any other. So likewiſe if we ſuppoſe any of the Circumſtances of this Syſtem different, the Effects will be different likewiſe; and a new Appearance of Things will follow, which in a comparative Senſe only may be called *better* or *worſe*.

The Phænomena of the Earth's Motion accounted for.

Thus, to inſtance in one Particular, *viz.* our Earth; The moſt natural and ſimple Motion, is that of a ſtreight Line; To produce any certain invariable Degree of which, nothing more is requiſite than one ſingle proportionate Impreſſion, and

and in this State it would by the mere Laws of Nature continue for ever. But in Order to any compound Motion, as That in every *Curve* is; 'tis neceſſary that in every *Point* of Space, and every *Moment* of Time, a new Direction ſhould be given to it, by a continually repeated Impreſſion: According to the *Force* of which, compared with the Projectile Motion and the Direction, will the *Kind* of the Curve be. If the *projectile* Determination, or Direction of the Tangent, be *perpendicular* to the Diſtance from the Center or the Radius; and the *Velocity* be ſuch, as that the Force with which the Body would fly off in a ſtreight Line, be equal to that Force with which it tends to the Center, it would revolve about that Center in an exact Circle; But if the *Poſition* of the *Tangent* be *oblique* to the

Radius

Radius, it will move in ſome other *Curve*, according to the *Degree* of ſuch *Obliquity*, and the *Velocity* given to the projected Body. And hence it is, that the Earth moves about the Sun in an *Ellipſis*, of which the Sun is the Focus; The neceſſary Conſequence of which is, that the *Areas* deſcribed by it are exactly proportioned to the *Times*; that the *Velocity*, with which it moves, is *greater* in ſome Part of its Orbit than in others, according as the Force with which it tends to the Sun, conſpires with, or retards the *projectile Force*; and that one Half of the Year is by ſeveral Days longer than the other.

The ſame may be applyed to all the other *Planets*, and the *Irregularities* of them will be found to ariſe from this Principle: In order for them to partake of the Light

The Phænomena of the Planets Motions accounted for.

and Heat of the Sun, it was neceſſary that they ſhould revolve about it, at ſuch particular Diſtances, and in ſuch determinate periodical Revolutions, as are adjuſted to their reſpective Denſities; and which upon the whole, is moſt conducive to obtain the deſigned End and Effect. It appears by Obſervation, that they all deſcribe *Ellipſes* about the Sun, as the common Focus of all their Orbs; the natural and neceſſary Effect of which is, that *They* likewiſe in the ſame Manner as the Earth, deſcribe Areas exactly proportioned to the Times, and move ſwifter when they are nearer the Sun, than when they are farther of; and that their Year, or periodical Revolution is divided into two unequal Parts, as ours is. All which ariſe from the ſame Principle, namely the Degree of projectile

Force

Force at firſt impreſſed upon them; and the particular Determination, or Inclination of the Tangent to the Radius or Diſtance from the Center; compared with the Force of Gravitation or Tendency towards ſuch Center. None of *Theſe* can be ſtyled *Evil* or *Irregular* when conſidered ſingly; and when compared together, they are only relatively ſo; as in the Nature and Reaſon of Things, ſome muſt be more excellent, have more uſeful Properties, and ſerve better Purpoſes than others. There are various Figures in which Bodies are capable of moving; and abſtractly conſidered, there can be no Reaſon why *one* ſhould be preferred to *another*. Thus a Circle, an Ellipſis, a Parabola, *&c.* are in themſelves equally *good*, though they have different Properties; and it ſeems much more agreeable,

that the infinite Wiſdom and Power of the Creator to whom they are all alike poſſible, ſhould be diſplayed in making all the Variety that can be; than that He ſhould be confined to ſome few Particulars excluſive of the Reſt. And this is confirmed by Experience in the Works of the Creation. The Planets do all actually move about the Sun in Ellipſes, and the Comets in Ellipſes ſo very large, that their Curvatures are inſenſibly different from thoſe of Parabola's: And there are Inſtances in Nature where Bodies are exactly moved in Parabola's and Hyporbola's, as in Projectiles, and the Aſcent of Fluids. And what other Curves, or different Species of *theſe*, may be applyed to other Syſtems, we do not certainly know; But there is juſt Ground to think, that there is infinite Variety, becauſe

cauſe the Degrees of projectile Force are infinite; the Determination of it, with Reſpect to the Radius is infinitely different, according to the Angle it makes; and the Force of Gravitation may alſo decreaſe in any Proportion of Diſtance; The Reſult of which, will be ſo many different Curves, all equally harmonious in their proper Places. Thus we ſee the Motion of every one of the heavenly Bodies conſiderd ſeparately, is exactly regular and uniform about the Sun, preſerved by that ſingle Principle of Gravitation, which hinders them more or leſs every Moment from flying off in ſtreight Lines. In the ſame Manner as we ſee by Experience, that if two homogeneous Bodies of different Magnitudes be connected together by a *Thread* or *Wire*, and a Center be found by dividing the Diſtance

in *reciprocal* Proportion to their Magnitudes; when they are once put in Motion, they will for ever revolve about that Center, unleſs hindred by ſome external Force. And the ſame Reaſon holds, whatever Sort of Matter it be, or how much ſoever we increaſe the Diſtance or Quantity of it: So that if this be applyed to the Sun and any of the Planets, it appears upon Calculation to be the very ſame in Them likewiſe.

The ſame applyed to the whole Syſtem.

Having thus conſidered the ſeveral Parts of this Syſtem ſingly, and the Laws they are governed by; let us now put them together, and examine what is the Reſult of ſucha Compoſition. It is evident that the Sun was created to communicate Light and Heat. Each of which decreaſing in a certain Proportion, *viz.* as the Squares of the Diſtances increaſe; they can

can be of Uſe to other Bodies, to a determinate Diſtance only, and in Proportion to their reſpective Denſities: And hence it is that their Number is limited, and that they extend but to a certain Diſtance. A Luminous and Hot Body, diffuſes its Light and Heat uniformly all round: The moſt convenient Place for *it* therefore is the Center; And *theſe* being Qualities peculiar to the Sun, it is for this Reaſon made the Center of the planetary Syſtem; every part of which, as it depends upon the Influence of the Sun, ſo it is proportion'd to it in every Reſpect. Theſe two Properties, as they are the moſt uſeful, ſo they are the moſt univerſal; For ſome degree of Heat is neceſſary to all kinds of Vegetation and Animal Motion; No Planets or living Creatures could be at all produced or ſubſiſt

without it. And without Light, both rational and irrational Creatures would be in utter Confusion, not knowing which way to direct themselves, but would perpetually interfere with each other. It is necessary therefore that every one of the heavenly Bodies should be adjusted to the Sun, both as to their Density, Distance, Quantity of Matter, and the like; that they may all receive from it the greatest Benefit they are capable of. And thus upon strict Enquiry they appear to be; The Heat, (and Light which is proportionable to the Heat) proceeding from the Sun, is as the Density of its Rays, that is, (if the Sun be considered as a Point, as it may very well be compared with the whole System) 'tis reciprocally as the Squares of the Distances: So that were we *twice* as far removed from the Sun

as

as we now are, we ſhould have but a *fourth* part of the Light and Heat we now enjoy: And were we *four* times as far, we ſhould have but a *ſixteenth* part ſo much. But it is neceſſary alſo to take in the Denſity of the Bodies to be heated: Becauſe two Bodies of unequal Denſities, ſuch as *Lead* and *Wood*, will not be equally heated at the ſame Diſtance. Wherefore ſince all the Planets could not revolve about the Sun at the ſame Diſtance, their Denſities muſt be, *cæteris paribus*, greater or leſs at different Diſtances. And thus upon examination we obſerve them to be: *Jupiter* is more denſe than *Saturn*, and the *Earth* more denſe than *Jupiter*; and *Mercury* probably is much more denſe than any of them; (though we have as yet no certain Means of finding out his Denſity:)

For

For it appears upon Computation *, that were our Earth as far removed from the Sun as *Saturn*, the Water would be all turned into Ice; and were it as near the Sun as *Mercury*, it would boil all away into Vapours. I say, this Proportion of the Denſities to the Diſtances, is only *cæteris paribus*; becauſe this Rule does not hold in the ſmaller Bodies (ſuch as the Moon,) which are more denſe than the larger, for another Reaſon †, *viz.* that the Force of Gravitation upon their ſeveral Superficies might approach nearer to an Equality. In general therefore the Planets are placed at ſuch different Diſtances from the

* Aqua noſtra, ſi Terra locaretur in Orbe Saturni, rigeſceret, ſi in Orbe Mercurii in Vapores ſtatim abiret. *Newt. ibid.*

† Denſiores itaq; ſunt Planetæ qui ſunt minores, cæteris paribus. Sic enim Vis gravitatis in eorum Superficiebus, ad æqualitatem magis accedit. Sed & denſiores ſunt Planetæ, cæteris paribus, qui ſunt Soli propiores; ut Jupiter Saturno, & Terra Jove.

the Sun, that each of them might enjoy a proportionable Quantity of Light and Heat, according to the Degree of their reſpective Denſities. The Planet *Mercury*, which is ſo much nearer to the Sun than we, is in a due Proportion ſo much denſer; and the Planet *Saturn*, which is ſo much farther remote, is alſo proportionably rarer. And by this Means Light and Heat are the moſt uſefully diffuſed throughout the whole Syſtem. Had it been otherwiſe, thoſe who are neareſt the Sun, would have been deſtroyed by exceſſive Heat; and thoſe which are moſt remote, by extreme Cold; whereas They all now enjoy a due Temperature ſuited to their reſpective Uſes.

In diverſis utique Diſtantiis a ſole collocandi erant Planetæ, ut quilibet pro gradu Denſitatis, Calore Solis majore vel minore frueretur. *Newt. Princip. Edit. Sec. Lib. III. Prop. VIII. Corol.* 4.

And

The particular Law by which the planetary System is governed.

And this naturally leads us to enquire what that Law in particular is, by which the Planets are thus adjusted, and what the Consequence of it is. And this can be known only by Observation and Experience of the Facts. There are innumerable Laws in the Nature and Reason of Things, arising from different Suppositions of several Degrees of Velocity, Centripetal Force and the like, every one of which are equally the Object of the great Creator's *Power*; And it can be resolved only into his *Wisdom* and *Will*, *which* particular *one*, out of the infinite Variety, shall be observed in any System; Which when it is once determined, Whatever is the natural Result of *that*, ought to be esteemed the most *perfect* and *compleat* in its Kind; And whatever *Defects* there may seem to be, which unavoidably flow

flow from hence, they cannot properly be ſtyled *Evil* in themſelves, but 'only comparatively leſs *good*,' and ſuch as cannot be prevented or remedied but by changing the Nature of the Things themſelves, and giving new Laws to them. Thus That Law of Motion which obtains amongſt all the great Bodies throughout this Syſtem, is what Aſtronomers call a *ſeſquialterate* Proportion of their periodical Times to their Diſtances; that is, the *Squares* of their periodical Times are as the *Cubes* of their Diſtances. This *Law* is neceſſary under the preſent Circumſtances of the Creation, to preſerve that Order and Harmony which is now eſtabliſhed in it; But originally it might have been otherwiſe, and it is now wholly owing to that univerſal Principle of Gravitation, which in all Bodies is in Proportion

Proportion to the Quantity of Matter contained in them, and decreaſes as the Square of the Diſtance increaſes.

This Law might originally have been different from what it is now.

This Property is no Way eſſential to *Matter*; becauſe we can conceive Matter to be abſolutely at reſt, and therefore indifferent to, and capable of all Kinds of Motion and particular Determinations of it; but it appears to be univerſally impreſſed upon Matter, and to extend it ſelf from the greateſt Bodies to the moſt minute Particles of which they are compoſed. And if we ſuppoſe any Alteration here, the whole Frame of Nature is immediately changed. Thus if the Force of Gravitation in the ſeveral Planets towards the Sun, had been greater or leſs according to the ſimple direct Proportion of their Diſtances; they would all have revolved about the Sun, in the

the ſame Time: So that their Years would have been of the ſame Length in the neareſt Planets, as in the fartheſt of. If the Force of Gravitation, inſtead of decreaſing as the Squares of the Diſtance increaſe, (as it does now,) had decreaſed ſimply as the Diſtance increaſed, then the periodical Revolutions of them would have been greater or leſſer exactly in Proportion to their reſpective Diſtances directly. Any of *theſe* Laws might have been originally impreſſed on this Syſtem, or they may actually be ſo on others; and the Reſult would have been only different Appearances, and different Effects from what we experience now: But abſtractly conſidered, they had been equally *good*, and, with Reſpect to the infinite Creator of all Things, equally the Object of his Wiſdom and

and Power. Though thus much must be said in Favour of the present Law, that thereby the Planets are retained in regular Curves; whereas if we suppose Gravity to be in a reciprocal Proportion of the Distance on the one Hand, or in a triplicate Proportion of the Distance directly, on the other Hand; there are no regular Curves at all, that we know of, in which they could move: Which perhaps may be a Reason why no such Forces should be impressed. There are other Laws which are equally possible, but which by the great Inconvenience which would immediately follow, seem not at all probable to be put in Execution; except it be to bring about some remarkable Changes or Events. Thus if the gravitating Force had decreased, as the Cubes of the Distance increase, and not as the Squares; the Planets would

would all have moved in ſpiral Lines, and (according to the Direction of the projectile Force, *viz.* the Inclination of the Tangent to the Radius or Diſtance from the Sun,) would immediately have ran into or off from the Sun, and have been deſtroyed by exceſſive Cold or Heat. I have inſtanced in theſe Proportions ſo particularly, becauſe they are abſolutely neceſſary to be known, in Order to give us a true Notion of the preſent Syſtem of the World; to ſhow the Wiſdom and Contrivance of its excellent Architect; and the Weakneſs and Folly of thoſe who pretend to find Irregularities in it.

Every ſingle Circumſtance is evidently the Effect of *Choice*, and not of *Chance* or *Neceſſity*. As Space is infinite, That Part which comprehends this Syſtem, might have been much greater or leſs;

This Law the Effect of Choice and not of Neceſſity or Chance.

according to the mere Will of *Him* who prescribed it; And as the *Quantity* and *Kind* and *Division* of the *Matter* contained in it, is also equally arbitrary, *These* also might have been entirely different according to His good Pleasure; And so likewise might the Laws of Motion, by which they are every one directed. The whole Composition therefore is such, as the great *Creator* intended it should be; who proposing a certain *End* by it, adjusted all the original Forces, so as best to attain that End: And having determined the *Time* of its Continuance, and the *Mutations* it should undergo, ordered the whole Connexion accordingly. What this general End is, 'tis impossible for us to find out, or for our narrow Capacities fully to comprehend; the Extent of the whole material World being so very great, and the Parts so numerous and so strictly

ſtrictly connected together. And the ſame may be affirmed of many of thoſe Parts, and the ſeveral Uſes and Purpoſes for which They are intended. But this hinders not, but that we may find out ſome of theſe particular Uſes, and approach nearer and nearer to the general End, by repeated Obſervation and Improvement. Thus by the *Analogy* there is betwixt the Planets and our Earth, *viz.* that They alſo are dark Bodies revolving about the Sun pretty near in the Plain of the Ecliptick; that their Axes are inclined to this Plain; and that they turn about ſuch Axes; It is very natural to collect, that They alſo are inhabited by ſeveral Species of Animals, who ſtand in Need of Light and Heat, and the like. For by this Means, They muſt in the Courſe of Things have, like us, a regular Succeſſion of Winter and Summer, Day and

Night; and must also have different Climates. The Comets seem to be the most extraordinary Appearances in Nature, and to have been as yet least accounted for; having been thought very irregular and subject to no certain Laws. But from later Observations and more strict Enquiry, even *These* also are found to move in very regular Curves, and to be situated in the best Position with Respect to each other; and to be of considerable Use. They appear to be very numerous; Which Consideration alone is sufficient to suggest to us, that there must be great Occasion for them in such a System as this. They are a Kind of Planets, being large and dense Bodies, with very gross Atmospheres, and are capable of emitting great Quantities of Vapours, as appears from the Bigness and Length of their Tails; And they revolve about the Sun

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in very large Ellipſes, of which the Sun is one of the Focus's. From all which we may collect ſome of their principal Uſes alſo. The Body of the Sun muſt neceſſarily be diminiſhed by that vaſt Quantity of Light that is perpetually emitted from it, and therefore in Time will decay and ſtand in need of a Supply of freſh Materials for Fewel. Theſe may be had from Comets; For by Obſervation we find that They ſometimes approach very near the Body of the Sun, and conſequently muſt at laſt fall into it; * For by Reaſon of their prodigious Swiftneſs at that Time, and the Denſity of the Sun's Atmoſphere, their Motion muſt be ſomewhat reſiſted and

* Propter ſummam Velocitatem in Vicinia illa, & Denſitatem aliquam Atmoſphæræ Solis, Reſiſtentiam non nullam ſentire debuit, & aliquantum retardari, & proprius ad Solem accedere: & ſingulis revolutionibus accedendo ad Solem, incidet in retard-

tandem in corpus Solis. *Newt. Princip. pag.* 480.

retarded; So that they will revolve nearer and nearer till they run into it. This may also be promoted by the † Gravitation of other Comets, when they are in Aphelio; because They move slowest in that Part of their Orbit, and consequently will be retarded by such Attraction, and an Alteration be produced in the Figure of their Orbs. But before they come to This, there are very good Reasons to think that they are of great Benefit to the Planets. Experience shows us that the Water in the Sea continually decreases, and the dry Ground continually increases; the great Quantity of Vapours which are exhaled from thence, being converted into Nourishment for

† Sed & in Aphelio, ubi tardissime movetur, aliquando per Attractionem aliorum Cometarum retardari potest, & subinde in Solem incidere. *Newt. ibid.*

for all Kind of Vegetables, which when they come to putrify, are in good Meaſure turned into dry Earth; ſo that by this Means a great Part of the Liquid is deſtroyed: All which Defects are probably ſupplyed from the Tails of Comets; For Theſe conſiſting chiefly of ſuch Vapours, and ſpreading themſelves to an immenſe Diſtance through the Heavenly Spaces, ‖ may fall by their own Gravity into the Atmoſperes of the Planets, and there be condenſed, and turned into Water and other Subſtances. To this we may add, ‡ that the fineſt and moſt ſpirituous Part of our Air, which is the moſt ſubtile, and the beſt,

‖ Vapores autem qui ex — caudis Cometarum oriuntur, incidere poſſunt per gravitatem ſuam in Atmoſpheras Planetarum, & ibi condenſari, & converti in aquam & Spiritus humidos &c. *Newt. ibid.*

‡ Porro ſuſpicor illum, qui Aeris noſtri pars minima eſt, ſed ſubtiliſſima & optima, & ad rerum omnium vitam requiritur, ex Cometis præcipue venire. *Newt. ibid.*

beſt, and is neceſſary to preſerve Life in every Thing; may with good Reaſon, be thought to proceed chiefly from the Comets. And from all Theſe things put together it is manifeſt why the Comets are not, like the Planets, confined to the Zodiac, but cut the Ecliptick at all Angles, and move freely through every Part of the Heavens, *viz.* That when they are at the greateſt Diſtance from the Sun, and move moſt ſlowly, they might alſo beat the greateſt Diſtance from each other, and ſo diſturb one another as little as is poſſible by their mutual Attraction.

All Evils that ariſe from hence, are only natural Imperfections.

In this Reſpect then, there is no other *Evil* but what the natural Imperfections of material Things, and the Qualities they are capable of, ſubject them to. And it is as unreaſonable to find fault with the Materials themſelves, or the Diſpoſition

ſition of them; as it is to complain of an Architect, who deſigns to build a Houſe for a hundred Years; that the Materials and Contrivance is ſuch, as will not laſt a thouſand. What St. *Peter* ſays of *Time* with Reſpect to the ſupreme Being, 2 Epiſt. *Ch.* 3. *ver.* 8. *that one Day is with the Lord, as a thouſand Years, and a thouſand Years as one Day*; may equally be affirmed of Extenſion or Motion, and any Powers or Qualities of created Beings. The largeſt Space that we can conceive, bears no more Proportion to Immenſity, than any limited Time does to Eternity; And there is no Velocity ſo ſwift, no Qualities of Matter ſo *intenſe*, but they are capable of being ſtill increaſed infinitely, according to the Power and Will of Him who is the original Author of them. It is evi-

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dent therefore, that as God is present every where, as a living, active, intelligent and free Being, that endureth from everlasting to everlasting, he must propose to himself some *End* in the Creation, to which all the Parts must be regularly subservient, and endued with such Powers and Qualities as are most conducive towards the Attainment of it. But *what* that *End* is upon the Whole, how extensive the whole Creation is, of what Duration past or to come, or what Alterations it *has* or *will* undergo; is impossible for our shallow Understandings to find out; The utmost we can do, is to observe the exact Harmony of that Part which is within our Reach, and to judge of the Wisdom and Knowledge of the Creator in general by this particular Instance of his Workmanship. This is the most

moſt obvious Way of Reaſoning; and thus, as St. *Paul* tells us, Rom. 1. 19. *That which may be known of God is manifeſt unto Men, for He hath ſhewed it unto them.* God is in his own Nature inviſible; no Man hath ſeen, nor can ſee him; But He may be made known to our Underſtandings, ſo far as they are capable of apprehending him, by obſerving the Excellency of his Works, and from thence collecting the Goodneſs of their Author: And thus *the inviſible Things of God from the Creation of the World are clearly ſeen, being underſtood by the Things that are made, even his eternal Power and Godhead,* v. 20. This is very eloquently expreſſed by the Royal Prophet, Pſal. 19. *ver.* 1, 2, &c. *The Heavens declare the Glory of God, and the Firmament ſheweth his handy Work; Day unto Day uttereth Speech, and Night,*

Night unto Night ſheweth Knowledge : There is neither Speech nor Language nor any Voice heard amongſt them; yet their Line (viz. *Proportion,*) *is gone out thro' all the Earth, and their Sound* (viz. *Harmony,*) *to the End of the World.* That is, whoever takes a View of the glorious Fabrick of the Heavens, and ſees the Number of the Stars placed therein ; cannot but be led immediately to admire the Greatneſs and Power of Him who created them : And he who goes ſo far as to examine their Motions and Order and the like; will reap from thence the moſt deſirable Knowledge. For every Day and Night by their regular Succeſſion, beſpeaks as plainly, as inanimate Things can ſpeak, the Wiſdom of him who moves them : And their Proportion is ſo exact and univerſal, ſo plain and manifeſt, that no Nation, Language,

guage, or Capacity, can poſſibly in ſome Degree orother eſcape the Obſervation of them. This Harmony and Proportion was particularly ſpecified by the famous Heathen Philoſopher * *Pythagoras*, and called the Harmony of the Spheres, ſo often mentioned by antient Writers.

* Macrobius Lib. II. in Som. Scip.

And had the Epicurean Atheiſts of old, or the forementioned modern Aſtronomer duly examined theſe Things, they would not have ſo raſhly pronounced concerning the *Faultineſs* of the Creation; They would have ſeen on the foregoing Principles, that what upon their Hypotheſes is ſo irregular and uncertain, is in Reality moſt uniform and determinate; and that all their Complaints are founded upon their Ignorance of the true Syſtem of the World, and the not diſtinguiſhing betwixt the *true* and *apparent* Motion of the heavenly

This Conſideration a ſufficient Confutation of Atheiſm.

venly Bodies. For if the ſeveral Planets revolve about the Sun at different Diſtances, and with different Velocities, and are illuminated by it; it muſt from thence neceſſarily follow, that to thoſe Perſons who inhabit one of the middle Ones, as we on the Earth do, the Others muſt be ſome times *nearer* and ſometimes *farther off*, and have different *Appearances* according to their reſpective *Poſition*. Thoſe that are betwixt us and the Sun, muſt have all the Phaſes which the Moon has, as the enlightened Part is turned to or from us; and Thoſe which are more remote, muſt appear ſometimes *bigger* and ſometimes *leſs*, muſt ſeem to go *forwards* in ſome Part of their Orbs, and to ſtand *ſtill* or go *backwards* in other Parts, according to the Difference or Equality of their Velocity. All theſe Irregularities are only

only *relative*, and ſuch as could not poſſibly be avoided upon the preſent Conſtitution of Things. And if we ſuppoſe the original Diſpoſition of them to have been different from what it is now, and other Powers and Qualities impreſſed on them; there would then ariſe only different Appearances and other Kinds of Irregularity; So that the Variety being infinite, it muſt depend entirely on the Will of the Creator which of them ſhall actually exiſt, they being all equally *good* with Reſpect to Him.

Whence the Irregularity's of any Part of this Syſtem proceed.

Having thus examined the natural *Imperfections* which are inhærent in the greater Bodies of this Syſtem compared with each other, let us come now to a particular Examination of the ſeveral Parts of our own Earth and what belongs to it, ſo far as they affect us; That we may ſee whence all thoſe *natural*

ral Evils arise, which both Mankind and all other Creatures are subject to. And here it will be more difficult to account for the great Variety of Phænomena; because the heavenly Bodies are very large and visible; their Distances such as are easy to be observed; and their Revolutions afford sufficient Time for taking Notice of them. But *These* are much more complex: They depend upon the particular Constitution of Parts so small, that they are absolutely invisible not only to the naked Eye, but even however assisted by Art; nay some are utterly impossible to be seen at all, (such as the Rays of Light, because they are themselves the *Means* of seeing all Objects;) Wherefore it is very hard to find out their different Shapes and Magnitudes, the Position they are placed in with Respect

Reſpect to each other; the original Forces impreſſed upon them, and the Laws they are governed by, conſequent thereon. Yet ſuch Improvements have been lately made in natural Knowledge, as are not only ſufficient to convince us in the general, that all *theſe* are exactly proportioned to each other; but enable us by repeated Experiments to aſſign the very *Laws* by which they are regulated, ſo that we can determine what the Effect will be, and conſequently what would ariſe from any Alteration of them.

Some of the principal of theſe Laws it will be neceſſary to enquire into, in Order to ſee wherein the *Good* or *Evil*, the *Perfection* or *Imperfection* of that *Thing* or *Being* conſiſts, which is governed by them. Thus the ſeveral Parts of the Earth are compacted together

Theſe alſo are the Effect of ſome particular Laws of Motion.

in the Form of a Globe, by the Law of *Gravitation* of all thoſe Parts towards the Center; All Kinds of Plants are generated and increaſe by the Law of *Vegetation*; Inferiour Animals, ſuch as Beaſts and Birds, are governed by *Inſtinct*; And *Men*, which are the higheſt Order of Beings here, have beſide *theſe* the Law of *Reaſon* to direct their Actions. *Theſe* are ſo many diſtinct Principles, accommodated to the Nature of thoſe Beings in which they inhere; According to the Kind and Degree of which, they are *more* or *leſs* perfect; and according to the different Compoſition of them, does the one prevail over the other. And by diſtinctly conſidering the reſpective *Ends* or *Uſes* they naturally ſerve, the *Imperfections* and *Abuſes* they are neceſſarily liable to, and how much the *one* is compenſated

penſated by the *other*, we ſhall be able to form a true Notion of *Good* and *Evil*, and to ſee from whence each of them ariſe. As to the Body of the Earth in general, with which we ought to connect the Moon, its near Neighbour and conſtant Attendant; They are the greateſt Confirmation that can be, of the forementioned Law of Gravitation; for by this ſingle Principle every the moſt minute Irregularity in them is accounted for. It is obvious to any one who conſiders the Moons Poſition with Reſpect to the Sun and Earth, that it muſt be very differently affected by them, and its Courſe perpetually interrupted: And its Motion is ſtill more complicate, becauſe its Plain is different from that of the Ecliptick, (as it was neceſſary it ſhould be, in Order to prevent much greater Irregularities, ſuch as con-

ſtant monthly total Eclipſes and the like, if the Moon and the Earth had moved in the ſame Plain ;) Yet ſo well known is the Cauſe of its Motion, that though it continually alters its Courſe, yet its Place may be exactly determined for any particular Time to come. And as the Moons Motion in its Orbis thus exactly ſtated, ſo likewiſe the Figure of its Body, and the Situation of it with Regard to us, is owing to the ſame Cauſe: For as the Force of Gravitation is greater or leſs, in the forementioned Proportion to the Diſtance; it muſt of Neceſſity be, that That Part of the Moons Body which is neareſt to the Earth, muſt be more ſtrongly attracted than that which is fartheſt of: And conſequently if it were a Fluid, or if it be not one continued Body, but the Parts diſtinct from each other; the Force by which they would tend

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to their own Center and make an exact Globe, is diminiſhed on one Side and increaſed on the other; ſo that it muſt become oblong, and have its longer Axis pointing towards the Earth: And if we ſuppoſe it to revolve about its other Axis, the ſame Face muſt always be turned towards us; for it would not reſt in any other Poſition, but be perpetually 'librating 'to and fro, till it came to this Situation. So likewiſe with Regard to the Earth and its Revolution about the Sun, nothing more is requiſite to ſolve all the various Phænomena, but this ſingle Thing, that the Axis about which it turns every Day, be inclined to the Plain of the Ecliptick in an Angle equal to the Complement of the Suns Declination, and that it keep the ſame Paralleliſm continually (that is, move always parallel to an Axis paſſing through the Center of the *magnus Orbis* and incli-

ned to the Plain of it always with the same Angle.) Hence must arise the perpetual Succession of Day and Night, and the Increase and Decrease of them; and hence must proceed different Seasons of the Year, Spring and Summer, Autumn and Winter. To this Cause are owing the various Climates of the several Parts of the World, the extreme Heat in some, and the excessive Coldness in others; And to this Cause likewise is owing the unequal Approach and Return of the Sun from one Tropick to the other.

These Irregularities cast no Reflection on the Good of the Whole.

Thus we have seen the Origin of every Irregularity that appears in the greater Bodies of this System, and may say with the wise Son of *Sirach*, Eccles. 39. 16. *That all the Works of the Lord are exceeding good, and whatsoever He commandeth shall be accomplished in due Season, and none may say, what is this? wherefore is that?*

For

For at Time convenient they ſhall all be ſought out.— All the Works of the Lord are good, and he will give every needful Thing in due Seaſon; ſo that a Man cannot ſay, this is worſe than that, for in Time they ſhall all be well approved. It is only our Ignorance or partial Conſideration of the Works of Nature, that makes us think we ſee great *Faults* in them; But if we examine more cloſely into them, or if we try to mend them, it preſently appears that the Miſtake is in our ſelves. Thus it has been thought, that if the Earth and Planets moved about the Sun as a Center, in exact Circles, the Syſtem would be more beautiful and uniform than it is now: But this is a very great Error; for though the Syſtem might be eſteemed better in that particular Reſpect, yet ſomething much worſe than the preſent

ſmall Irregularities would ariſe, *viz.* that the Syſtem would not be governed by one ſtated certain Law, as it is now; but Forces muſt be continually added or diminiſhed, in Order to effect ſuch an Hypotheſis. For ſuppoſing the Planets did move originally in Circles (as poſſibly they did) according to the preſent Laws; yet ſtill their Velocities muſt have been different; and conſequently they muſt have overtaken each other; And then the mutual Actions of Comets and Planets upon one another muſt neceſſarily have altered the Figures of their Orbs, and created thoſe little Irregularities which are ſcarce worth Notice, * as is obſervable in *Jupiter* and *Saturn* near their Conjunction. Therefore in the preſent State there is the leaſt Inconvenience that the Nature of Things will admit: And *That* is abundantly compenſated by the ſu-

* Newt. Prop. XIII. Lib. III.

perior

periour Convenience. Thus the Inequality of the Earth's Velocity and Diſtance from the Sun, makes no ſenſible Difference from what it would be, if it moved in a perfect Circle, as to the Benefit we receive from its Light and Heat. Eight Days bear but a ſmall Proportion to half the Year, and the *Excentricity* is but as near ſeventeen to a thouſand, which can produce but very little Effect. And the ſame may be applyed to all the other Parts of the Syſtem. They ſerve the End for which they were appointed, in the beſt Manner poſſible upon the Whole; and they are all ſo ſtrictly connected, that if we try to vary or diſturb them, the Conſequence tends to confound all the Frame of Nature. So that notwithſtanding the Objection of Atheiſts in this particular, we may affirm with the Roy-

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al Pſalmiſt, *That God appointed the Moon for Seaſons, and the Sun knoweth his going down*, Pſal. 104. ver. 19. That as He has made the heavenly Bodies to have a mutual Influence upon each other, ſo He has determined the particular Courſe and Order of them, which they never in the leaſt deviate from. And the Words of *Job* upon the like Occaſion will well become ſuch Objectors, *Ch.* 40. *ver.* 4. *Behold, I am vile, what ſhall I anſwer thee? I will lay my Hand upon my Mouth. Once have I ſpoken, but I will not anſwer; yea twice, but I will proceed no further.* And that this will be the Caſe with Relation to the Government of the World in Thoſe Particulars which more nearly relate to us, the *Evil* of which is ſo greatly complained of; will appear by the like Examination of them.

Let

Let us therefore conſider the ſeveral Parts of which our own Earth is compoſed, and the Manner we are affected by them; that we may ſee whence all thoſe *natural Evils* ariſe, which both Mankind and other Creatures are ſubject to. Upon a particular Enumeration of the Works of the Creation in the 1ſt. *Ch.* of *Geneſis*, they are pronounced *very good*, and ſuch as are worthy of God to be the Author and Framer of; Yet there is ſcarce any *one* of them, but in ſome Reſpect or other has afforded Matter of Complaint, and been thought by Some an Objection againſt the Wiſdom and Goodneſs of the Creator. *Objections concerning Earth.*

The dividing the Light from the Darkneſs, *ver.* 4. in the Manner it now is, has been objected againſt, as very unequal with Reſpect to the ſeveral Parts of the Earth; *With Regard to the inanimate Part of it.*

Earth. Likewiſe the gathering together of the Waters unto one Place, that the dry Land might appear, which cauſed the *Earth* and *Sea*; is alſo attended with many *Inconveniences*; For ſuch is the Proportion, and Diviſion of them, that the Quantity of Water is ſo very great in ſome Parts, as to form large Seas and Lakes, and none at all in other Parts; by which Means vaſt Tracts of Land become barren Deſerts. The Quality of the Water is alſo objected againſt, *viz.* its Saltneſs, by which it is rendred unfit for Drink, and for many other Uſes of freſh Water: And, which is ſtill worſe, 'tis liable to produce Deluges, by which whole Countries are overflowed and deſtroyed. The Air alſo, with which the Earth is ſurrounded, and which is ſo abſolutely neceſſary to Life, that no Kind

of

of Animals, nor even Plants can be at all preſerved without it; is ſubject to perpetual Storms and Tempeſts, Thundrings and Lightnings; The Effects of which are often fatal to Men and other Creatures. And it is many Times ſo infected and corrupt, as to cauſe Plagues and Famines, by which whole Cities and Countries are depopulated and made deſolate. The Graſs, Herbs and Trees yielding Seed and Fruit after their Kind, *ver.* 12, have alſo their Objections; Many of them are noxious and poiſonous, and others of them are ſaid to be a Curſe rather than a Bleſſing, *ch.* 3. *ver.* 17. *Curſed is the Ground for thy Sake—Thorns and Thiſtles ſhall it bring forth unto thee.*

And as the *Inanimate* Part of the Creation, is thus liable to Diſorder and Irregularity; The *Animate* Part of

With Reſpect to the Animate Part of it.

mate and *Rational* Part is subject to much greater Evils and Inconveniences. The various Kind of Fish with which the Seas and Rivers are filled; The different Sorts of Birds that fly in the Air; And the Fowls, Beasts, and creeping Things that move on the Surface of the Earth; These are a Prey to each other. The weakest and most defenceless are Food for the strongest; who are provided with natural Weapons to take and devour them: And many of them are hurtful and some poisonous to Mankind. But the greatest of all *Evils* are those that Man is subject to. Though He was *created in the Image of God*, that is, made Lord and Governour of this lower World; yet *He was formed out of the Dust of the Ground, and had the Breath of Life breathed into his Nostrils, whereby he became*

came a living Soul, Ch. 2. v. 7. This Compoſition renders Him liable to numberleſs Accidents and Calamities. That Body which is made of Duſt, muſt be liable to be reſolved into Duſt again: And there are Variety of Means by which this may be effected. And as He becomes living and ſenſible, by the Breath of Life; ſo muſt He be obnoxious to Pain, Diſeaſes and Death; *In the Sweat of thy Face ſhalt thou eat Bread, till thou return unto the Ground out of which thou waſt taken, Ch. 3. ver.* 19. Theſe are Calamities which Mankind are ſubject to, in common with all other animal Creatures; But they are endued moreover with Reaſon and Liberty, from which ariſe ſtill greater *Evils* than any of the forementioned ones, *viz.* all Kinds of Immorality and Wickedneſs; which have

have brought greater Calamities and Desolation upon them, than all the natural Causes put together; A large Catalogue of which, St. *Paul* gives us in the 1st. *Ch.* of the *Rom.* This is the Division of the several Parts of this lower World, in the original Formation of it, according to the Days in which they were created: And notwithstanding the forementioned Objections, they are singly at the Conclusion of every Days Work pronounced *good*; *and God saw that they were* good. By which must be meant, that they are such as are agreeable to the Wisdom and Goodness of God to make; That they are as perfect as the Nature of Things will allow them to be; And that, whatever Defects or Abuses they are subject to, are upon the whole sufficiently compensated by that general *Fitness* they have

'Good' Gen. 1.

have to obtain the End propoſed by them. This will more plainly appear, by conſidering the ſeveral Parts of the Earth, and the Inhabitants belonging to them; the Materials, of which they are compoſed; and the Laws they are ſubject to; From whence ariſe all thoſe *Evils* of Imperfection, which I propoſed to account for. By *Analogy*, we might juſtly conclude, from what has been ſhown concerning the exact Harmony and regular Motions of the greater Bodies of this Syſtem; that the ſeveral Parts, of which theſe Bodies themſelves are compoſed, are alſo with Reſpect to each other adjuſted moſt nicely, and made ſubject to ſuch Laws, as are proper for the Uſes deſigned by them; And that all their *Irregularities*, are only *ſeemingly* and *comparatively* ſuch, and the *natural* Effects of thoſe

Powers and Qualities with which they are endued. This is a very natural and eaſy Inference; And the modern Improvements in Philoſophy have rendred it not only conjectural, but certain; For by numberleſs Experiments, and a diligent Examination of the Nature of Things, they ſeem to have been compoſed in the following Manner.

The original Conſtitution of Things on the Earth.

That the great Creatour of all Things propoſed certain Ends by every Thing that He has made, is evident to the moſt common Obſervation; For no Man can really be ſo void of Reaſon, as to think that his Eye was not made to ſee with, or his Ear to hear with; or that the Objects of Sight or Hearing are not nicely calculated to reflect the Rays of Light, and to excite Vibrations in the Air, in a due *Manner* and juſt *Proportion*,

portion, ſo as beſt to attain to thoſe Ends propoſed. And the ſame may be affirmed of every Particular throughout the whole Creation. Whence it ſeems highly probable, * That God Almighty at the Beginning, created juſt ſuch a *Quantity* of Matter, as is proportioned to the *Space* in which it was to move; That the *Original* Particles of this Matter are *ſolid*, *impenetrable*, and very *laſting*; That they are of a particular Figure and Bigneſs, and endued with particular Laws of Motion; From the various *Texture* and *Compoſition* of which, a-

* Quibus quidem rebus omnibus bene perſpectis & conſideratis, illud mihi videtur denique ſimillimum veri; utique Deum optimum maximum, in principio rerum, *Materiam* ita formaſſe, ut primigeniæ ejus particulæ, e quibus deinceps oritura eſſet corporea omnis natura, ſolidæ eſſent, firmæ, duræ, impenetrabiles, & mobiles; iis magnitudinibus & figuris, iiſque inſuper proprietatibus, eoque numero & quantitate pro ratione ſpatii in quo futurum erat ut moverentur; quo poſſent ad eos fines, ad quos formatæ fuerant, optime deduci. *Newt. Optices, Edit. Sec. pag.* 409.

riſe thoſe different Sorts of Bodies of which this World is conſtituted. The Variety of *Theſe* is infinite, and the poſſible Varieties of them are all equally the Object of infinite Power. It belongs therefore to Wiſdom and Knowledge to determine *which* ſhall actually exiſt, and *which* will beſt ſerve the Ends and Purpoſes of the Creator. And to Us they can only be known by Experience and Obſervation. From whence we collect; that the original Particles of Matter are perfectly ſolid, without any Interſtices or Pores (which all compound Bodies have, whoſe Parts touch one another in but very few Points, and which bear but a ſmall Proportion to that Space which they poſſeſs, as appears by their different Denſities;) the original Particles, I ſay, are ſo hard as not to be worn or diminiſhed, and are not capable of being broken

broken into ſtill ſmaller Pieces by any Force how great ſoever in Nature; Becauſe, if we ſuppoſe *Theſe* to undergo any Alteration, the whole Nature of Things, which depends entirely upon them, would immediately be changed, and quite different ones ariſe. Thus, if we conceive the *Earth* or *Water*, as it now is, to be formed of ſuch Particles as are before deſcribed, and that the Differences in thoſe Bodies are owing wholly to the different Texture and Compoſition of ſuch Particles; If *theſe* be by any Means leſſened or put into new Figures, the Reſult muſt unavoidably be another Sort of Earth and Water from what we now behold, and ſuch as perhaps does or may exiſt in other Parts of the Univerſe. As to the particular Figures and Bigneſs of theſe Particles, it is not poſſible for us to know them: They are ſo ſmall that

no Improvements of Art can reach to the Discovery of them: But some general Laws which they are subject to, we can by Observation arrive at; and These discover to us the wonderful Contrivance of their various Compositions, and will help us to account for the Irregularities and Imperfections which are objected against them.

The Particular Laws they are subjected to.

The principal of these Laws are *Gravitation*, *Cohæsion*, and *Fermentation*: By which Words we do not mean to explain the *Causes*, but only to signify particular *Kinds* of Motions or *Tendencies*, whatever *Causes* they are owing to. * Thus as by *Gravitation* is meant That *Tendency* which all Bodies have mutually and equally towards each other, and

† Hanc vocem *attractionis* ita hic accipi velim, ut in universum solummodo vim aliquam significare intelligatur, qua corpora ad se mutuo tendant; cui-

is

is always exactly proportionable to the Quantity of Matter contained in them; So by *Cohæſion* is meant another Sort of || *Tendency* (which is vaſtly ſuperiour to that of Gravity) whereby the *ſmaller* Parts of all ſolid Bodies, when they come within a certain Diſtance, or perhaps touch each other in ſome Points, are ſtrongly united together; The particular *Manner* or *Degree* of which, is very hard to find out; becauſe the Diſtance is ſo very ſmall before they begin to act upon each other, that we cannot well aſſign any *Pro-*

cunque demum cauſæ attribuenda ſit illa vis. *Newt. Optic. pag.* 380.

|| Quî autem iſtiuſmodi præduræ particulæ, adpoſitæ ſolummodo inter ſe, ſeque invicem in perpaucis tantum punctis contingentes, cohæreſcere queant; idque tanta vi, quanta experientia novimus; utique, niſi cauſa ſit aliqua quæ efficiat ut eæ ad ſe invicem *attrahantur* vel *apprimantur*, concipi vix poteſt. *Newt. Opt. ibid. pag.* 396.

portion of it. And by ** *Fermentation* is meant that contrary *Tendency* which is in the Particles of fluid Bodies to recede and fly off from each other, with certain Degrees of Velocity not yet exactly determined; though by its regular Effects, in *emitting*, *reflecting*, and *inflecting* the Rays of Light, and in the producing of *Air* and *Vapours*, it appears that the Cause of These must be regular and act uniformly. These and such like particular Kinds of Motion impressed on the original Particles of Matter, are the universal Laws of Nature, by which every Thing is formed, and by which alone the present Phænomena can be explained; And they are derived from

** Nam particulæ e corporibus excussæ per calorem vel fermentationem, simulac e sphæra attractionis corporis sui evaserint, recedunt deinceps & ab illo & a se invicem magna cum vi; rursumque accedere fugiunt. *Newt. ibid. pag.* 402.

from certain Principles *really* acting upon them according to the foremention'd Rules. For all that ſuch Particles are capable of in themſelves, is only mere Paſſiveneſs; and therefore the various Degrees and Determinations of Motion, muſt be owing to ſome active Cauſe continually exerciſing certain *Forces* upon them; which *Forces* are of different Degrees, and applyed in a *different*, though always regular and uniform Manner; and therefore ought to be diſtinguiſhed from each other.

That there ſhould be only three or four ſuch univerſal Principles, from whence the whole Phænomena of Nature ariſe, and upon which all the Properties and Actions of corporeal Things depend, can be aſcribed only to the mere Will of Him who created them. They might have been more or fewer in Number; *Theſe Laws the Effect of Choice.*

ber; They might have been different in Kind or Degree: For, abſtractly conſidered, there is no End of the Variety, and in infinite Space there is Room for the Exerciſe of them all. *Thoſe* that we experience here, are ſuch as in the general are admirably well ſuited to the Purpoſes for which they are appointed; and if at any Time they fail of attaining Them, it is only through ſuch *Imperfection* as in the Nature of Things they muſt be ſubject to, and which could not be prevented or avoided but by changing their original Properties.

And appointed for very good Ends and Uſes.

Thus by the forementioned Principle of Gravitation, all the Parts of the Earth tend towards the Center; The natural Conſequence of which is, that the whole Earth, is compacted into the Form of a Globe, the lighter Parts giving Way to the heavier till

till they are all exactly ballanced. And this is the moſt convenient Form, for turning about its own Axis; that every Part might have its Proportion of the Sun's Light and Heat; And this affords alſo the largeſt and moſt regular Surface for Inhabitants. But this Form muſt neceſſarily be a little altered by the Earth's diurnal Rotation; for thereby the Parts of the Earth about the Equator moving ſo much ſwifter than thoſe towards the Poles, muſt by their Endeavour to fly off in ſtreight Lines, diminiſh the Force of Gravity, and conſequently thoſe Parts muſt be higher; and ſo by * Experience they

* *By the Vibrations of Pendulums; For the ſame Number of Vibrations of a given Pendulum in thoſe Places which are near the Equator, require longer time than in* thoſe *near the Poles; wherefore the Spaces which heavy Bodies by falling deſcribe in a given time by the accelerative Force of Gravitation, are greater as they approach nearer the Poles, and conſequently the Force of Gravity is greater in thoſe Places, and for that Reaſon they are nearer the Center of the Earth.*

are

are found to be, the difference being about thirty one Miles. And if it was not thus, the Sea would ſink at the Poles, and riſe at the Equator and overflow all the Places about it. By this Force alſo, Things are retained upon the Superficies of the Earth, and all Kinds of Animals are capable of moving upon it, and all Bodies acquire great Motion by falling.

The principal of thoſe Uſes.

By the Principle of *Cohæſion*, which is ſo much ſtronger than that of *Gravity*, the original Particles of Matter are united together, ſo as by their various Texture and Compoſition to form thoſe different ſorts of Bodies which we obſerve in Nature, the ſeveral Kinds of Solids and Fluids; To enumerate the Particulars of which, would be to inſtance in all the Works of the Creation. Some of the principal we ſhall have

have occaſion to conſider, both as to the *End* they ſerve, and the *Irregularities* they are capable of; from whence we may judge of the reſt, the whole being uniform and analogous. So likewiſe by the Principle of *Fermentation*, Heat and Life are preſerved and maintained; the Sun it ſelf is nouriſhed and cheriſhed hereby, which affords ſuch Plenty of Light and Warmth to all the Parts of this Syſtem. All Generation and Vegetation of Plants and Animals is owing to *this*; the Juices in the one, and the Blood in the other, is kept in perpetual Heat and Motion thereby. So that were it not for theſe Principles of Motion, the whole material World would quickly become a mere paſſive Lump of uſeleſs Matter; the Earth and Planets would be involved in everlaſting Cold and Darkneſs,

neſs, and all the Species of Creatures in the Univerſe would immediately die.

Theſe afford Anſwers to the foremention-ed Objections.

Having thus briefly deſcribed the Nature and Effect of the chief of thoſe Laws by which Things are at preſent regulated; By a particular Application of them, we ſhall be able to anſwer the forementioned Objections againſt the Excellency and Perfection of the preſent State of the Creation, and, notwithſtanding ſuch ſmall Irregularities, to ſay with the Royal Pſalmiſt, *Pſal.* 104. *v.* 24, &c. *O Lord, how manifold are thy Works, in Wiſdom haſt thou made them all. The Earth is full of thy Riches; ſo is the great and wide Sea, wherein are things creeping innumerable, both ſmall and great Beaſts.* For if it appears upon the whole, that there is a particular *End* propoſed by God Almighty

ty in the Creation; that the ſeveral Parts of it are endued with ſuch Powers and Qualities as are moſt conducive to that *End*; and that every natural *Evil* or *Irregularity* is ſuch only as in the Courſe of things could not be prevented but by deſtroying alſo that Principle from whence every thing that is *good* and *regular* proceeds: If this I ſay, be evident, all ſuch Objections muſt immediately vaniſh, and we may pronounce with *Moſes* in the 1 *ch.* of *Gen.* that *every thing which God has made*, is very good, though comparatively ſpeaking *ſome* things are much more perfect than *others*. And that this is the preſent Caſe, is what I ſhall endeavour to ſhow in the principal Inſtances alledged; and give ſuch particular Anſwers, as the modern Improvements in natural Knowledge furniſh us with; and I ſhall follow

follow the Order obſerved in this Chapter.

The unequal diviſion of Day and Night, Light and Darkneſs, and the Uſes thereof, have been already conſidered.

The Objection of the unequal Diviſion of Land and Water conſidered.

The next thing is the Separation of the Water and the Land, which diſtinguiſhes the Globe into two Parts, the one called *Earth*, and the other *Seas*. The Deſign and End of this is obvious, *viz.* for the Convenience of thoſe ſeveral Species of Creatures which were to inhabit each of them. The Earth is accommodated with every thing neceſſary to maintain Men and Beaſts, and the Sea with every thing neceſſary to preſerve Fiſhes. The Proportion of *theſe* to each other, is what has been objected againſt; but without the leaſt foundation of Reaſon or Experience

perience *; for it appears from Obſervation, that the Seas are no bigger than is requiſite to preſerve the preſent Conſtitution of the Earth. Water is neceſſary towards the Support of all Kinds of Plants and Animals: They can neither be produced nor preſerved without it, and therefore it ought to be diſtributed to every Part of the Earth; as it is accordingly done from the Seas, as a Treaſure and Magazine. The Sun by its Heat cauſes the Water, which is impregnated with nutricious Particles, to riſe up into Vapours in ſo great a Quantity, as to form themſelves

* Maria ad conſtitutionem Terræ hujus omnino requiruntur, idque ut ex iis per calorem Solis vapores copioſe ſatis excitentur, qui vel in nubes coacti decidant in pluviis, & terram omnem ad procreationem vegetabilium irrigent ac nutriant; vel in frigidis montium verticibus condenſati (ut aliqui cum ratione Philoſophantur) decurrant in Fontes & Flumina. *Newt. Princip. Edit. Sec. p.* 473.

ſelves into thick Clouds, which being carried about by the Wind, are diſperſed and fall down in Rain, which moiſtens the Ground and renders it fruitful. Or elſe theſe Vapours are condenſed by the Cold on the Tops of high Mountains, and by that Means produce Fountains, which gather as they run along, till they become Rivers affording Plenty of Water for all the Uſes of Life. And as there is this Reaſon in Nature for ſo great a Quantity, ſo is there alſo as good a Reaſon for that particular Quality of it, its *Saltneſs*. Freſh Water muſt be in continual and quick Motion to keep it from putrifying and ſtinking; But the Channels of the Ocean are ſo large, as to render them uncapable of a ſwift Current, ſo that it can have no more Motion than is given it by

by the Winds, the Reciprocation of the Tides, and the Revolution of the Earth about its own Axis. But theſe are not ſufficient, as appears from hence; that if it be calm but three or four Days, the Water in the Ocean corrupts and breeds Animals, which ſtink and infect the Air. To compenſate this want of Motion therefore the Water was made Salt, which produces the ſame Effect as violent Motion would do, and is ſeparated from it when it is exhaled into Vapours. By this ſingle Inſtance we ſee what a wrong Judgment Men are apt to make when they view Things in one Light only, or make undue Compariſons of them, and thence proceed to find fault with and condemn them. The ſeveral *Evils* and *Inconveniences* which ariſe from this particular Conſtitution of Sea and Land, are ſuch only as are

the unavoidable Conſequences of thoſe Laws by which each of them is governed, and are the feweſt that in the Nature of Things can be, when they are adjuſted in the beſt Manner poſſible. To take therefore one ſingle Part, and to imagine it might have been better in ſome Reſpects than it is, without connecting the Whole, and ſeeing what Uſes it may beſt ſerve with Regard to *that*, is a very unfair and partial Way of arguing. To make the Objection good, it ought to be ſhown, how the original Diſpoſition and Order of the Parts, could have been better in all Reſpects, to ſerve that *End* which they are manifeſtly intended for. But we are ſo far from being able to do that, that if we try but to alter any one of them in *Quantity*, *Quality*, or *Place*, we immediately ſee the Abſurdity of

of it. Thus, had the Quantity of Water in the Sea been *leſs* than it is, it would not have been ſufficient to afford Rain for the whole Earth; For there are at preſent large Tracts of Land, which ſeem to be barren and deſolate for Want of Moiſture. And were the Quantity much *greater* than it is, probably there would be as great a Part of the Earth rendred uſeleſs on the other Hand through the Abundance of it. And the ſame may be affirmed of the other Circumſtances of it. It was not intended for Drink either for Men or other Animals who live on the Earth, the Rivers being ſufficient for that Purpoſe; and it is very proper Drink for thoſe Creatures that live in the Sea; Its Saltneſs therefore is no juſt Objection againſt it; And the Inundations that are cauſed by it, if it be con-

ſidered how ſeldom they happen, what a Complication of Cauſes they are owing to; ſuch as the low Situation of ſome particular Countries, whoſe Defenſes are only artificial and weak; the incidental high Winds; Spring-Tides, Seaſon of the Year, and many other Circumſtances all conſpiring together; conſidering alſo what Remedies there are in Nature to prevent or provide againſt them; Theſe will not hinder us from thinking, *That God has eſtabliſhed his Decree upon the Sea, and ſet Bars and Doors, and ſaid, Hitherto ſhalt thou come, but no further; and here ſhall thy proud Waves be ſtayed*, Job 38. *ver.* 10, 11. &c.

The Objection of the Inequality of the Earth's Surface, conſidered.

Of the ſame Kind is the Objection drawn from the Inequality of the Earth's Surface, conſiſting of Mountains, Vallies and Plains, every one of which have their

Incon-

Inconveniences; but much greater would follow, if it were otherwiſe. This Inæquality is in itſelf very inconſiderable, though it appears to us very great; for the higheſt Mountains bear but a very ſmall Proportion to the Earth's Diameter, by which they ought to be eſtimated. And if we ſuppoſe this Irregularity removed, and that the Superficies of the Earth were exactly Even and level; the Conſequence would be, that the Water which is lighteſt, would diffuſe itſelf every where uniformly and cauſe an univerſal Deluge. An Inequality therefore was abſolutely neceſſary, to ſeparate the Land from the Water, and to keep the Rivers in perpetual Motion: Beſides, the great Uſe of Mountains was before hinted, *viz.* to collect Vapours and condenſe them into Springs; For the Tops of very

high Monntains are obſerved to be perpetually involved in Clouds, and to be covered very deep with Snow, and to be extreme cold; All which, cauſe that great Number of * Springs and Rivulets which are every where found in the Sides of ſuch Mountains. To which may be added, that the choiceſt Fruits grow on the Sides of Mountains, which being oblique are moſt expoſed to the Heat of the Sun; And in the Bowels of them are contained the moſt uſeful Minerals. Some of theſe Mountains are indeed very dangerous and deſtructive, ſuch as the ſeveral burning Mountains which many Times overſpread the neigbouring Country with Fire and Aſhes: The Cauſe of which is to be aſcribed to the forementioned Principle of *Fermentation*,

* Et nunc ſicca, prius celeberrima fontibus, Ide. *Ovid. Metam. Lib. II. ver.* 218.

mentation, and is the natural Reſult of it. And were this removed, a much greater Evil would unavoidably follow; for it is obſerved that thoſe Parts of the Earth abound very much with Sulphur, and Salts, and Minerals, all which are abſolutely neceſſary towards the Fertility of the Earth, and to Vegetation and Life in Plants and Animals; For Theſe, by mixing together, firſt grow warm, as we ſee in Baths; and in other Places become extreme hot, and at laſt take Fire; and by their ſudden Expanſion in the Caverns of the Earth, either cauſe Earthquakes by tearing it in Pieces, or elſe force their way out of one particular Paſſage, and ſo form burning Mountains. And this ſeems to be the Original of them, and That Method by which, in the preſent Courſe of Things, ſuch *fermenting* Particles

are

are diſſipated throughout the Air and Earth, in Order to produce the Effects deſigned by them. For moſt very high Mountains are obſerved to have Aſhes on or near the Top of them; which looks as if they were generated this Way. If therefore we conſider of what vaſt and univerſal Uſe the Materials are which ſpring from this Fountain, we ſhall be ſo far from thinking them *evil*, or intended to be *miſchievous* to Mankind or other Creatures, that on the contrary, ſuch *Evil* is only partial and accidental, and the leaſt that in the Nature of the Thing can be; and the *Good* and *Benefit* on the other Hand, the greateſt and moſt univerſal: In the ſame Manner as Heat and Light, are the moſt univerſally beneficial to the World; yet too great a Quantity or Intenſeneſs of either of them, is as miſchievous

vous and deſtructive to all Creatures; Notwithſtanding which, it was neceſſary that ſuch a Quantity or Intenſeneſs ſhould be in ſome Places: So theſe *fermenting* Materials are very uſeful: And it is as weak an Objection againſt this Uſefulneſs, that where a large Supply of them is collected together, they muſt by the ſame *Principle* be liable to exert a proportionably violent Force, attended with as violent Effects.

The Objection concerning Heaths and Deſerts &c. conſidered.

The remaining Part of this Objection, relates to barren Heaths and large Deſarts; *ſome* of which are uninhabited, and *others* ſeem by their Sandineſs and Want of Water, to be utterly uncapable of any Inhabitants, at leaſt of Men. Theſe ſeem to ariſe partly from the voluntarily Neglect of Men, and partly from the Imperfection of the preſent State of Things.

From

From the Careleſsneſs of Men, in neglecting to cultivate and improve them: For it ſeldom happens, even in thoſe Places, but that there are different Sorts of Earth, not ſo far diſtant from each other, but that by Art and Induſtry, they may be mixed together in ſuch a Manner as to become fertile; Whereas on the contrary, Men have not only neglected to make ſuch Improvement, but by Luxury and Wars and the like, have depopulated whole Countries, and rendred even *Thoſe* barren and unfruitful which Nature had made rich and plenteous. That part which ariſes from the *Imperfection* of the preſent Courſe of Things is, that originally theſe very Places, which are now ſo deſolate, might poſſibly be furniſhed with all Manner of Plenty, and yet be naturally reduced to their preſent State. For *Moiſture*

is

is abſolutely neceſſary to the producing and increaſing of all Kinds of Vegetables, which, upon their Diſſolution, is in great Part of converted into dry Earth; (all putrified Liquors affording ſome Sort of Muddineſs.) Whence it follows, that in this whole Globe of Earth, the Moiſture muſt continually decreaſe, and the dry Ground increaſe; And unleſs there be a Supply from ſome other Cauſe, it muſt in Time totally fail. It is not therefore Matter of Wonder, if from all theſe Cauſes put together, upon View of the ſeveral Countries of the World, compared with each other and with themſelves at diſtant Times; it appears that *one* is ſo much more fertile and plentiful than *another*; that *that* which was once a Garden, ſhould become a Wilderneſs; and where formerly a populous and potent Nation

Nation dwelt, we now behold nothing but Sand and Desart. These are such natural *Evils*, as the Constitution of the Surface of the Earth unavoidably renders it subject to.

Objections relating to the Air considered.

And if we proceed from hence to the Air with which the Earth is incompassed; we shall find, that *this* also has its Inconveniences and Irregularities. From hence come Storms and Tempests, Thundrings and Lightnings, which oftentimes destroy Men and Beasts, and blast the Fruits of the Earth. And from some Corruption or Infection of *this*, arise Pestilences and Famines, by which whole Cities and Countries are depopulated and made desolate. And here also we ought to consider, what is the natural Result of the Constitution of the Air; How universally beneficial it is; Whether such Phænomena

nomena do not proceed from ſome particular Circumſtances of it; Whether They alſo may not be of ſome Uſe; Or whether the preventing them would not be of worſe Conſequence; And how much of this Inconvenience may be owing to Mens *Neglect* or *Abuſe*. The general Conſtitution of the Air, (as appears by numberleſs Experiments) is ſuch, as ariſes from a Property or particular Motion of its Particles, directly contrary to that of Gravitation or Cohæſion. For by theſe latter Powers, they have a Tendency towards each other; but by that * Springineſs or Elaſticity with which they are endued, they have a Tendency to recede from each other, and to expand themſelves into a Space many hundred

* Quæ tam ingens contractio & expanſio, animo ſane concipi vix poteſt, ſi particulæ aeris fingantur elaſticæ & ramoſæ, vel viminum lentorum intra ſe in circulos intortorum inſtar eſſe, vel ulla alia ratione, niſi ita ſi *vim repellentem* habent, qua a ſe mutuo fugiant. *Newt. Optic. pag.* 403.

hundred thouſand Times bigger than they poſſeſſed when in the Form of a condenſed Body. This is very evident to Thoſe who are acquainted with the Method of working by Algebra, where the *negative* Quantities begin as the *poſitive* ones end; So here, where the Force of *Attraction* ceaſes, the contrary Force of *repelling* or *receding* begins. And it may alſo not unfittly be illuſtrated by the Motion of the heavenly Bodies about the Sun: For in that Part of their Orb in which the projectile Force conſpires with *that* of Gravitation, they tend towards the Sun; and in the other Part where *Theſe* are contrary to each *other*, they recede from it: And if we ſuppoſe their Orbits changed from Ellipſes to Hyperbola's, the *Centripetal* will be converted into a *Centrifugal* Force. In like Manner it appears in the

ſmall

ſmall Particles of Mattter, that at *one* Diſtance they act on one another by the Law of Gravitation; at *another* Diſtance, by the Law of *Cohæſion*, (which may alſo be called a particular Attraction, when they come to be within each others Spheres;) and by that of *Repulſion* or flying from one another, when by *Fermentation* or Heat ſuch Particles are emitted from ſolid Bodies. Theſe are no Hypotheſes or Fictions, invented to ſolve the Phænomena of Nature, but they are real Laws of Motion, by which material Bodies are governed; and they are as nicely and exactly obſerved in the moſt minute Particles with Regard to each other, as they are in the greater Bodies of the Univerſe. Theſe Particles compoſe a Syſtem; and approach to, and recede from each other in regular Curves; as is moſt evident in Experi-

ments of Rays of Light, which are reflected and inflected by Bodies, and transmitted through them, in as uniform Curves as those in which the Planets move about the Sun. The same be may affirmed also of Air and Vapours; as is clear from the Manner of the Production of them, *viz.* by Heat and Fermentation: † For the Particles are by this Means forced off from Bodies with great Violence; and consequently as soon as they are beyond the Sphere of Activity of the attractive Body, they fly off, both from It, and from each other, with a proportionable Velocity. And as all the Irregularities of the greater Bodies of the Universe were either *visual* or *optical*, or else such as were natural

† Nam particulæ é corporibus excussæ per calorem vel fermentationem, simul ac e sphæra attractionis corporis sui evaserint, recedunt deinceps & ab illo & a se invicem magna cum vi, rursumque accedere fugiunt. *Newt. Optic. pag.* 402.

tnrally effected by thoſe Powers which were originally impreſſed on them, or by the Interpoſition of other Bodies, which a little diſturbed them; So here likewiſe the preſent Irregularities of the Air ariſe from the ſame Principle, and, ſo far as we have Means of coming to the Knowledge of the particular Circumſtances of it, we can account for the Event.

Thus, it is objected againſt our Air, That it is ſubject to frequent Storms and Hurricanes of Wind, to Thundrings, and Lightnings, which are often deſtructive both to Men and other Animals, and by which the Fruits of the Earth are blaſted; And it is many Times ſo infectious and corrupt, as to cauſe Plagues and Famines, by which whole Cities and Countries are depopulated and laid waſte. *Objections concerning the Air.*

The Nature of Air and the Laws it is subject to

In Order to account for the Origin of these Evils and Calamities, it will be necessary here also to enquire into the Nature and Constitution of the Air, so far as we have Means of coming to the Knowledge of it; that we may be able to judge of its Powers and Effects, and to see how much is owing to the Laws it is subject to, and how much is to be ascribed to the Neglect or Carelessness, of Men. That Air is not by any Means to be rendred visible, is evident from hence; that when it is never so much condensed by artificially thrusting a very great quantity into a small Space, there appears not the least difference in the Transparency. We cannot therefore by Sight come to the knowledge of its Laws, as we do of the great and visible Bodies; But there are numberless Experiments by which the general

ral Nature of it is made manifeſt, and which will account for the principal Effects of it. The peculiar and diſtinguiſhing Property of Air, is its *Elaſticity* or *Springineſs*, that Power by which the Parts endeavour to recede from one another, and to expand themſelves all round, ſo as to poſſeſs any given Space; the Degree of which is found by the force that is required to compreſs it, Action and Reaction being always equal to each other. This alſo is a certain and poſitive Law, by which theſe minute, and to us inviſible Parricles of the Air, are as regularly governed as the heavenly Bodies themſelves. And by conſidering what the Conſequence of ſuch a particular Motion is, we ſhall ſee the vaſt Uſe and Benefit of it, and what Imperfections and Diſadvantages it muſt be liable to. Though

this Springineſs be the peculiar Quality which belongs to it as *Air*, yet is it alſo ſubject to that univerſal Law of Gravitation, which belongs to all material Things under every Form and Conſtitution, and 'tis no Way inconſiſtent with it; this *latter* always reſpecting the Center of the Earth, and the *other* reſpecting only the Particles themſelves. And to the Compoſition of theſe two Motions, is owing that particular Denſity of the Air here near the Surface of the Earth, which is neceſſary for the Subſiſtence of Men and all other Animals. Were its Particles void of Gravitation, they would immediately fly off, with a Velocity equal to their Compreſſion, and be entirely diſſipated; And were they void of Elaſticity they would ſubſide to the Surface of the Earth; But the Quantity of the Air being exactly adjuſted

adjuſted to this *expanding* Force, ſo that the incumbent Weight might compreſs it to a due Denſity, this renders it fit for all the Purpoſes for which it was intended. That this is the general Conſtitution of the Air, is confirmed by undeniable Experiments; which accurately meaſure its particular different Denſity, in different Places; and demonſtrate, that about the height of ſeven Miles from the Earth, it is four times thinner than upon its Superficies; and at the height of thirty-five Miles, it is above a thouſand times more rare than with us. Which plainly diſcovers the particular *Uſes* of this Element.

Thus, by the ſmallneſs of its Particles and their regular Diſtance from each other, the Air is rendred a tranſparent Medium; which it was very neceſſary it ſhould be, *The particular Uſes of this Element.*

that Objects might become visible; Otherwise the Faculty of Seeing in all Kinds of Animals had been wholly lost; They would have been in utter Darkness, and been liable to rush continually against each other, when they moved out of their Places. By the *Elasticity* or *Springiness* of these Particles, whereby they endeavour to recede from each other all Ways; the Air is rendred the most proper Medium for all Creatures to move most freely in: For by this Means it is not only *fluid*, that is, will very easily yield to any Force, and by such yielding, have its Parts freely moved amongst one another; but by its Reaction, the incumbent Weight, (which is very great, sufficient to compress the Bodies and Vessels of all Animals, so as no Juices could circulate in them,) is so far

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taken off, that they can, with little Reſiſtance, move ſwift enough for all the Purpoſes of Life. From the ſame Principle ariſes *Sound*, which is nothing elſe but the Effect of different Vibrations of the Air, ſtriking upon the Organs of Hearing: Which affords not only the pleaſure of Muſick, but is the great Inſtrument of conveying Mens Thoughts to each other. To *this* alſo is owing That other Kind of Motion which we call *Wind*; which is ſo neceſſary towards the duly tempering and mixing the Particles interſperſed in the Air; alſo for conveying the Clouds from one place to another, and for cooling the Air in the hotter Climates of the Earth. To which we may add its *artificial* Uſes and Improvements by Men; as in the Art of Navigation; by

which

which we are acquainted and traffick with the moſt diſtant Nations. Alſo the ſeveral Sorts of *Mills* and the like, which diminiſh very much that Labour which muſt otherwiſe come upon Men and other Animals. But the principal Uſe of all, is Reſpiration, which is abſolutely neceſſary to the preſervation of Life both *Animal* and *Vegetative*; For the Particles of Air inſinuate themſelves not only into the Veſſels, but alſo mix with the Juices contained in them, in all living Things; Whence through its equal preſſure on every ſide, the diſtractile Veſſels are capable of being contracted and dilated with great Eaſe by the *vital* Power, ſo as to inſpire and expire a ſufficient Quantity of Air to carry on the Circulation. That this Air is impregnated with *acid* Particles, or abounds with *acid* Vapours, is evi-

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dent from experience: The Nature of which Particles, or the Laws they are ſubject to, we judge by the Effect. Thus that they are the Cauſe of *Fermentation*, is evident from hence, that ſome Metals, ſuch as Iron and Copper, when they are expoſed in the Air, immediately contract a Ruſt; and that a common Fire is very much increaſed by blowing, or mixing a great Quantity of Air with it. From whence it follows that theſe Particles muſt be pretty groſs, and endued with a very ſtrong attractive Force, when they come near one another; By which Force, when they ruſh together in any Fluid, they agitate the parts of it, which cauſes *Heat*; or ſeparate them with great Violence from each other, in which conſiſts *Fermentation*. And thus the Pulſe of the Heart, and the Circulation of Juices, is preſerved by Reſpiration;

ration; For, upon dilating the Lungs, a great Quantity of Air is received in, which carries along with it thoſe nitrous acid Particles with which it abounds; which being thus conveyed into the ſmall diſtended Veſſels, mix with the Fluids contained in them, and, by *fermenting* there, cauſe ſuch a gentle Heat and Motion as is neceſſary to preſerve Life.

The natural Effects of its being ſubject to theſe Laws.

Theſe are the principal Laws by which this Medium is governed; which it was neceſſary to mention particularly, in Order to account for thoſe *Irregularities* which by this Means it muſt be continually liable to, and which, compared with the general *Uſefulneſs* of it, will be found to be no juſt Objection againſt it. That * the Air is ſupplyed with nitrous and ſulphureous Particles from the internal Parts

* Si eodem tempore conſideremus quam multum ſit Sulphuris intra Terram, & quam calidæ ſint partes interiores

Parts of the Earth, is evident, if we conſider what a vaſt Quantity of Them is contained in its Bowels; which diſcover themſelves in the ſeveral burning Mountains, in hot and ſuffocating Exhalations, ſome of which are eaſily inflammable, and alſo in hot Fountains and the like. Theſe Caverns are the Magazines of ſuch Particles, as the Sea is of the Water; and they are conveyed from Them all over the Surface of the Earth, much in the ſame Manner as Water is; For upon their mixing with Minerals, a *Fermentation* is immediately raiſed, which diſſipates them ſo that they are exhaled along with the watry Vapours, and driven by the Wind

Terræ; Fonteſque fervidos contemplemur, Monteſque ardentes, Mephiteſque ſubter Terram ſubitaneas, & Vapores inflammabiles, Coruſcationes Metallicas, Terræ motus, Exhalationes æſtuoſas et ſuffocantes, Ventorum turbines, immaneſque Aquæ marinæ in Cælum uſque elatos & contortos Vortices; utique intelligere poterimus &c. *Newt. Optic. pag.* 384.

Wind from one Place to another, till the whole Atmosphere is impregnated, with them. And as in the Instance of the Sea, so great a Quantity of Water, which yet is absolutely necessary to furnish the Earth with Rain and Rivers, must sometimes be subject, by the Laws of it, to overflow its Banks, and so cause Innundations and Deluges, by which particular Countries are injured; So *here* also, under some Circumstances, these *Fermentations*, which in the general are no more than is requisite to fill the Air sufficiently for the Purposes of Life, must cause great Mischief in certain Places.

The Objections concerning Storms and Earthquakes &c. considered.

Thus, the internal Parts of the Earth being the only proper Place for containing so large a Store of Sulphur and Nitre and Minerals as is required for so many thousand Years as this Earth in its present

ſent State has, and may yet continue; it muſt neceſſarily be, that when this *Fermentation* is made in ſuch ſubterraneous Caverns as are not wide enough for the Particles to expand themſelves in, or have no open Paſſage to ruſh out at, they will, by the forementioned Law, ſhake the Earth to a conſiderable Diſtance, tear thoſe Caverns to Peices, and, according to the Depth of ſuch Caverns or Quantity of Materials contained in them, remove large Pieces of the Surface of the Earth from one Place to another; in the ſame Manner, though to a much higher Degree, than *artificial* Exploſions made underground; the Effect of which is very ſenſible to a great Diſtance. If it happens that theſe *Fermentations* are in Places under the Sea, the Water mixing with theſe Materials increaſes their Force, and is thereby

thereby thrown back with great Violence; ſo as to ſeem to riſe up into the Cloudsand fall down again, ſometimes in very large Drops, and ſometimes in whole Spouts, which are ſufficient to drown all that is near them. If the *Fermentation* be not ſo violent, but ſuch only as raiſes large Vapours or Steam's, which can find their Way through ſmall occult Paſſages of the Earth; *Theſe*, near its Surface, by their continual Expirations are at firſt the Cauſe of gentle Winds; And theſe afterwards by their continual Increaſe become perhaps Storms and Whirlwinds and Tempeſts, which many Times deſtroy the Fruits, tear up the Trees, and overthrow the Houſes: But if they be ſtill more gentle, there being always ſome ſulphureous Exhalations, eſpecially if the Earth be dry, they then aſcend along with the

the lighter Vapours into the upper Region of the Air, where when a large Quantity of them is gathered together, they *ferment* with the acid Nitre, and taking Fire, and exploding, cauſe Thunder and Lightning and other Meteors. This, as far as can be gathered from Experience and Obſervation of the Works of Nature, is the Origin and Cauſe of thoſe *Imperfections* and *Evils*, which the preſent Conſtitution of the Air, and the Laws of Motion obſerved by thoſe Particles mixed with it, unavoidably ſubject it to. They are the natural and genuine Effects, of the *Regulation* it is under; and without altering the primary Laws of it, (that is, making it ſomething elſe than what it is, or changing it into another Form; the Reſult of which, would be only to render it liable to *Evils* of another Kind, againſt which the

ſame Objections would equally lie;) or in a ſupernatural Manner hindring it from producing ſuch Effects, it is impoſſible to prevent them. And if we add to this, that theſe *Evils* are the feweſt that in the Nature of Things could be, without hindring a much greater *Good*; that they are in the moſt convenient Parts, and the moſt guarded againſt doing Miſchief, that could be; and that there are alſo good Uſes to be made of them; we ſhall have no Reaſon to complain of, or find fault with them. Were the Quantity of Sulphur and Nitre much diminiſhed, there would not be ſufficient to fill the Region of the Air for the Purpoſes of Vegetation and Life; but the Ground would grow barren, and the Plants and Animals would waſt and die: And if there were a much greater Quantity, the contrary

trary Effect would happen ; The Earth would be too fat, the Plants would grow too groſs, and the Animals would be ſuffocated and choaked. The Temperature is therefore as exact as it could be, all Circumſtances conſidered ; and the ſmall Inconveniences are nothing, compared with the general *Good*. Thoſe Vapours which cauſe Thunder and Lightning, are by their Levity conveyed to the higheſt and moſt remote Parts of the Atmoſphere ; where, their Explo-ſion being capable of Any Direction, it ſeldom comes *perpendicular* on the Earth, and more ſeldom reaches it, by Reaſon of the greater Denſity of the Air near its Surface: And were theſe Vapours not to be diſcharged in this Manner, the Air would be ſo filled with them, as to be more *pernicious* to Men and all other Creatures :

They are therefore of very great *Uſe* towards purging and purifying the Air from noxious Steams and Exhalations, and the like. The ſame may be ſaid alſo of Storms and Hurricanes of Wind: The Caſe of the Air, is much the ſame as that of the Sea; If the Water ſtagnates but a few Days, it corrupts and ſtinks: So likewiſe if the Air ſtagnates, it corrupts and becomes unwholeſome, in a ſhort Time; So that it was neceſſary there ſhould be Storms of Wind to agitate its Particles, and to give them a due mixture. So likewiſe concerning Vulcano's and the like; They are of Uſe to generate Mountains and Iſlands, and to enrich the Countries round about them; For we obſerve them to be generally in the moſt fertile Places, the Materials with which they abound being proper for this Purpoſe,

poſe. Thus we ſee that theſe *Imperfections* and *Evils*, which this Part of the Creation is by the general Laws of Nature ſubject to, is by no Means inconſiſtent with what *Moſes* pronounces concerning all the Parts of it; *That behold they are very good.* And therefore in Scripture theſe very Things are often in particular mentioned, not as unworthy of the Perfections of God; but as Manifeſtations of his Glory and Excellency: According to that of the Royal Pſalmiſt; *Whatſoever the Lord pleaſed, that did he in Heaven and in the Earth, in the Seas and all deep Places. He cauſeth the Vapours to aſcend from the Ends of the Earth; He maketh Lightnings for the Rain; He bringeth the Wind out of his Treaſuries*, Pſ. 135. ver. 6, 7. *Therefore praiſe the Lord, for the Lord*

is good : Sing Praiſes unto His Name, for it is pleaſant, ver. 3. And again, Pſ. 29. ver. 3, 4. *It is the Lord that commandeth the Waters ; it is the glorious God that maketh the Thunder ; it is the Lord that ruleth the Sea, the Voice of the Lord is mighty in Operation, the Voice of the Lord is a glorious Voice.*

The Objection concerning Plagues and Famines, conſidered.

The remaining Part of the Objection is, that this Air is many Times ſo corrupted and infectious, as to cauſe Plagues and Famines, by which whole Countries have in great Meaſure been depopulated and deſtroyed. *Theſe* may be partly aſcribed to the natural *Imperfections* of Things, and partly to the voluntary Neglect of Men. It was before obſerved, that a due Temperature of the Air is neceſſary to the Vegetation of Plants and Reſpiration of Animals; whence

whence it follows, that if this Temperature be diſturbed any Way, ſome proportionable Inconvenience muſt ariſe. If the Air abounds with too many nitrous and ſulphurous Particles, the Conſequence is, that the *Fermentation* will be alſo too great, ſo as to accelerate the Juices and diſtend the Veſſels more than is proper for the Nouriſhment either of Plants or Animals; or if it be ſtill more violent, it may break Them in Pieces. Or on the other Hand, the Air may want a ſufficient Quantity of ſuch Particles, and then the *Fermentation* may not be great enough to promote a due Circulation of thoſe Juices; but the Motion may grow languid, or at laſt the Juices may quite ſtagnate. In either of which Caſes, Diſeaſes and Death will unavoidably follow. And theſe Evils come to paſs naturally, according to the forementioned

Laws: For at the first Eruption of such Vapours, the adjacent Places must needs be too plentifully stored with them, so as by their excessive Heat and Intenseness to destroy the Products of the Earth; and afterwards by continually decreasing, and in the End being wholly spent, the very same Places may become barren and desolate. But this may be ascribed likewise in some Measure to the voluntary Neglect of Men*: The Earth being created principally for the Habitation of Man, there is a very strict Connexion and Proportion betwixt Them, in Order to render the Earth the most useful and serviceable: And an Excess on either Hand, *viz.* when there is too many or too few Inhabitants, may produce the Effects here complained of. In barren and desert Countries, where the Ground is uncultivated, and the Waters

* *plura* 228.

ters permitted to ſtagnate, and where very large Woods which the Wind cannot penetrate, make the Air to ſtagnate alſo; the Earth ſends forth noxious Steams and corrupted Vapours, which being carried along by the Wind, infect the neighbouring Nations. And in very populous, and cloſe-built Cities, the contrary Effect is produced, for Want of a due Circulation of Air, and for Want of its being proportionably impregnated with *fermenting* Particles. Whence it is obſerved that ſuch Diſtempers are for the moſt Part generated, in one or other of theſe extremely different Places. Theſe are the principal Cauſes of the forementioned *Evils*, which this Medium of the Air is ſubject to; and from the Compoſition and Variety of them, ariſe different Sorts and Degrees, which muſt be accounted for by particular Obſervation and Expe-

Experience; it being impoſſible for us otherwiſe to find out the Ingredients of which ſuch Mixtures are compounded, the Caſes being almoſt infinite. But the Uniformity we every where ſee in Nature, is a ſufficient Reaſon to aſcribe the ſame Kind of Effects, to the ſame general Cauſe.

Objections againſt the Produce of the Earth conſidered.

Having thus conſidered the Nature and Effects of the Air, I come now to the next Part of the Creation according to the Diviſion of *Moſes*, *Gen.* 1, *viz.* the Herbs and Plants with which the Surface of the Earth abounds; Of theſe it is ſaid, *ver.* 12, *That the Earth brought forth Graſs and Herb yielding Seed after his Kind, and the Tree yielding Fruit, whoſe Seed was in itſelf after his Kind; and God ſaw that it was good.* To which it is objected; that many of *Theſe* are *noxious* and *poiſonous*

poiſonous to Men and other Creatures, and others of them are ſaid to be a Curſe rather than a Bleſſing, Ch. 3. ver. 17. *Curſed is the Ground for thy Sake;— Thorns and Thiſtles ſhall it bring forth unto thee.* That the principal of *Theſe*, ſuch as the different Sorts of Corn and other Grain, were chiefly deſigned for the Uſe and Benefit of Men, is evident, in that they are the moſt agreeable Food for them: But as the Allwiſe Creator thought fit to make Variety of Other inferior Creatures, it was neceſſary that *They* alſo ſhould be ſupplied with ſuch Kind of Suſtenance as was proper for them. Wherefore, as the Royal Pſalmiſt expreſſes it, *Pſ.* 104. *ver.* 14. *He cauſeth the Graſs to grow for the Cattle, and Herb for the Service of Men, that He may bring forth Food out of*

of the Earth, and Wine that maketh glad the Heart of Man, and Oyl to make his Face to ſhine, and Bread which ſtrengtheneth Man's Heart. The natural Conſequence of which, is; that as every Species of Creatures has its proper Food, is endued with peculiar Degrees of Sight or Taſte or Smell, in Order to diſtinguiſh it from all others; as they have their Mouths and Teeth framed ſo as moſt eaſily to take the Food and render it fit for the Stomach, and ſuch Juices in the Stomach as will beſt digeſt it into Nouriſhment; It muſt, I ſay, from hence follow in the Courſe of Things, that any Defect, or Miſapplication, or Superabundance of *Theſe*, muſt be injurious or noxious, whenever it happens; which yet caſts no Reflexion upon the general *Good*. And hence it is, that what is Food

and

and preſerves Life in one Animal, may be Poiſon and Death to another; becauſe its Stomach may not be at all able to digeſt it; or it may do it in ſuch a Manner, as to cauſe a Fermentation too ſtrong or too weak for the Veſſels in which the Juices are contained; The ſeveral Degrees, or different Varieties of which, cauſe greater or leſs Diſorders and Irregularities. There is no Fault or Defect in the Things themſelves; They are the moſt uſeful that they were capable of being made; And 'tis merely the Names we give to them, on the Account of thoſe diſagreeable Effects they produce when out of their natural State, that makes them ſeem to be *evil*, when the contrary ought to be affirmed of them, and often is ſo in another View. Thus the ſame Plant which in ſome Reſpects and under ſome

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Circumſtances is ſtiled *poiſonous*, is in other Reſpects and under other Circumſtances very excellent and uſeful: It is perhaps a Remedy for many Diſtempers, or, according as the Body is diſpoſed, perhaps a proper Diet. Before we peremptorily pronounce concerning the *good* or *evil* of ſuch Products of the Earth, we ought to find what are the Ends and Uſes of them; for till this be done, we cannot truly determine about them. Now in thoſe that we do know, they appear ſufficiently to anſwer the Deſign of the great Creatour, and are therefore *good*. And as the *other* may do ſo too, for ought we know; nay from the Analogy of Things and their proceeding from the ſame Original, they cannot but do ſo; they are not only, not *Evil*, but *Good* likewiſe. And what is

ſaid

ſaid of the Grounds being curſed and bringing forth Thorns and Thiſtles, is no Objection againſt this general Truth: For thoſe Words ſeem only to be comparatively ſpoken; and relate to the Garden of *Eden*, out of which our firſt Parents were removed for their Tranſgreſſion, and on whoſe Account that pleaſant Place was levelled with the common Earth, and brought forth Thorns and Thiſtles, inſtead of thoſe choice Fruits it was repleniſhed with before; And therefore with Regard to Them it is ſaid to be *curſed*, that is, *leſs bleſſed*; for Thorns and Thiſtles have their Uſes in bringing forth Food for Birds and the like. And in this Senſe *bleſſing* and *curſing*, *loving* and *hating* are frequently uſed in Scripture.

'Curſed' in Gen. 3.

The general Application of the foregoing Particulars.

Thus we have gone through the *inanimate* Part of the Creation,

on, and have distinctly considered the principal Instances which have been thought most liable to Objection; and have given such Answers to Them, as the Nature of the Things afforded. It is impossible to take in every Particular under all its Variety of Circumstances, because they are innumerable; But as the same Reason holds for all, it is easy to apply the general Rule. That every Thing which exists, was created for some *End* and *Purpose*; That it is regulated by some *Law* or endued with some *Faculty* in its own Nature most proper and conducive to attain That particular *End* and *Purpose*; This we come to the Knowledge of, by Experience and Observation and by an Induction of Particulars: For this is the only Way we can arrive at any Knowledge of this Kind, *viz.* to make Observation

vation in all the Inſtances where we have Means of doing it, and, where the Analogy is the ſame, to apply it to thoſe Things that we cannot come at; and then by abſtracting, form a general Rule *a priori*, from which we may ſafely argue afterwards. Thus, that all Bodies *gravitate* towards each other, we find by Experience, in all Inſtances that we have had any Opportunity of trying; From whence we make no Scruple to affirm, that if any different Sorts of Bodies which we had never ſeen, were brought from other Countries or out of the Bowels of the Earth; I ſay, we ſhould not ſcruple to affirm, that *Theſe* alſo were *heavy* in Proportion to the Quantity of Matter contained in them: And ſo we may proceed till we have made it a general Law of Nature; after which we may argue *a priori*, and

venture to determine what particular Effects will be produced by a Syſtem of Bodies acting upon one another in this Manner. So likewiſe, that thoſe Things which we are more immediately converſant with, and have Opportunities of knowing the Circumſtances and Condition of, have their peculiar *Ends* and *Uſes*; is too obvious to be doubted by any ſerious Perſon. As, that the Eye was made to ſee with, and the Ear to hear with; That Corn was made to grow for the Service of Man in furniſhing him with Bread the Staff of Life, and Graſs in the ſame Manner for Food for the Cattle: That *other* Things which at firſt were thought to be wholly uſeleſs, have by Experience been found, upon removing them out of their Places, to be very neceſſary; and thoſe with which they were inviſibly

inviſibly connected, to ſuffer by it; and others which were thought really injurious, have upon more ſtrict Obſervation and Inquiry, been found to be very beneficial and ſerviceable; as Seas, Mountains, Vulcanoes and the like. We may reaſonably from hence conclude alſo that *every* Thing has its proper Uſe, and is therefore *good* in the Place originally intended for it. Wherefore ſince we can find no Inſtance to the contrary, in thoſe Things that we have Means of coming to the Knowledge of, which appear to be the *beſt* that it is poſſible for us to conceive, in their ſeveral Degrees and Orders; And ſince, where we have not ſuch Opportunities of Knowledge, we may juſtly infer the ſame, becauſe the whole Syſtem of Nature is uniform, and the further we enquire into it, the Beauty and Order of

it appears more and more ; This ought to be ſatisfactory, unleſs it could be made appear that any Part of the Creation is in every Reſpect *uſeleſs* ; which it is impoſſible to do, becauſe we cannot tell all the Ways that it may be applyed, and ſuch Ignorance is no Argument againſt the Excellency of the Thing. And this is the only Way we can have of judging of the Works of the Creation, which are ſo numerous, have ſo ſtrict a Connexion with each other, and are capable of ſo much Variation. And as we have juſt Reaſon to think, that every even the moſt minute *Thing* in the Creation, was made for ſome *End* or *Uſe*, tho' very different in Degree, which renders them *better* or *worſe* relatively, but upon the whole, and in their proper Places, they are all *equally good*; So is it likewiſe

wiſe evident that they are ſubject to ſuch *Laws*, or endued with ſuch *Powers* and *Properties*, as are moſt conducive to attain thoſe *Ends*. This is demonſtrable not only of the greater Bodies of the Univerſe, but alſo of Thoſe which ſeem to us the moſt inconſiderable: The meaneſt *Weed* that grows in the moſt barren Field, if viewed in a Microſcope, affords ſufficient Matter of Admiration; to ſee the Texture of its ſmalleſt Particles, and the nice Adjuſtment of all its Fibres and Veſſels, in Order to bring it to a State of Maturity. And the ſame may be affirmed of the leaſt Grain of Sand; and of the ſtill ſmaller Patticles of Matter which are to us utterly inviſible; as is evident from the Effects. The different Rays of Light, could not excite in us different Colours; nor the different Vibrations of Air,

raiſe in us as different Sounds, in the moſt exact Proportion; if the component Particles of the Bodies from whence they proceed, and the Medium through which they paſs, and the Organ of Senſation which receives them, were not all regulated and connected, in the moſt exact Manner poſſible. So that what our Saviour ſays in this Caſe, is literally true, *Luke* 12. ver. 28. *That God cloaths the Graſs of the Field; that a Bird falls not to the Ground without Him; and that the very Hairs of our Head are all numbred*; That is, They are all of them under the Direction of Him, who governs them by the wiſeſt and beſt Laws which the Nature of the Things are capable of. And this leads us to the *Cauſe* and *Origin* of all thoſe natural *Evils* which have been before mentioned, *viz.* that

that *Things* are not under an unavoidable *Neceſſity*, but are directed by certain Laws; the natural Conſequence of which is, that as different Sorts of Bodies are ſubject to different Laws, are endued with differenr Powers and Qualities, ſome of which are much ſuperiour to and ſtronger than others; ſo they muſt ſometimes interfere with each other, and produce many *Irregularities*, which are the natural Effects of ſuch different Compoſitions. Were all Things under a fatal Neceſſity, and unalterably determined in their Courſe; there would then be no ſuch Thing as *Good* or *Evil*, *Perfection* or *Imperfection*: But the infinite Variety we obſerve in the Univerſe, is a Demonſtration againſt ſuch *Neceſſity*; which vaniſhes upon the very Suppoſition of any *Change* or *Alteration*. But every Thing

ſubject to different *Laws* or *Rules*; this is the Foundation of all thoſe Inconveniences complained of: And this was not poſſible in the Nature of Things to be prevented: There could have been no Degrees or Ranks of Creatures; There could have been no Order or Harmony in the World, without ſuch Differences. The whole therefore is reduced to This; either that there muſt be no created Beings at all, or they muſt be liable to ſome *Evils* or other of this Kind. Let the Suppoſition be what it will, it amounts to the ſame. Whatever is created, is *finite*, and therefore if compared with any other created Thing of a different Kind, is relatively *better* or *worſe*; and if they have any Connexion with each other, they cannot but produce Changes and Alterations, which are what we call

good

good or *evil.* All that is reaſonably to be expected, or agreeable to the Notions we have of Wiſdom, is, That there ſhould be Variety in the Works of the Creation; That every Part ſhould be as perfect as it can be in its Place; That they ſhould all be ſubſervient to one another, and promote the Good of the whole. And if the unavoidable Conſequence of this be, that ſome ſmall Defects and ſeeming Irregularities will ariſe, *Theſe* when compared with the general Uſe, will be found ſcarce worth taking Notice of. This is evidently the Caſe in all the foregoing Inſtances: They are ſuch only as are the natural Reſult of being governed by particular ſtated Laws, which in themſelves are originally perfectly indifferent, and are accommodated to ſerve the Buſineſs of this Syſtem in the beſt

beſt Manner poſſible. And to ſuppoſe the entire Abſence of ſuch Evils or Imperfections, is wholly inconſiſtent with the Notion of any created Beings at all, is introducing Fate or Neceſſity, is to ſuppoſe the ſame Cauſe ſometimesproducing its genuine Effects, and ſometimes not, without any Thing to hinder it; or elſe to imagine the uniform Laws of the Creation ſhould be perpetually altered or ſuſpended without any ſufficient Reaſon. It is much more agreeable to the Notions we have of Wiſdom in general, and to what we know of the preſent Circumſtances of the Creation from Obſervation and Fact; to think, that every the moſt minute Part of the Univerſe is governed by a certain Law which tends to the good of the whole, and that every *Evil* or *Irregularity* is the natural

Reſult

Reſult of this under particular Circumſtances, and is of ſmall Moment compared with the general Good, and conſequently no reaſonable Objection. Thus in the greater Bodies of the Univerſe, the Law of Gravitation is abſolutely neceſſary in Order to their revolving in their ſeveral Orbits; the natural Conſequence of which is, that by their mutual Acting upon each other, ſome ſmall Irregularities muſt happen, by accelerating or retarding their Motions, altering the Figure of their Orbits, and the like; Which perhaps in very long Time may come to be ſo conſiderable, as to want putting into better Order. But this is of no Weight againſt the preſent State of them: They now ſerve the Purpoſes for which they were originally intended, in the beſt Manner poſſible; Theſe Irregularities

gularities are ſcarce worth taking any Notice of; It will a be very long Time before they can make any great Change; Which when it does come to paſs, they will have endured as long as the Creator and Governour of them thought fit, to anſwer the End He deſigned. And as they were not * at firſt created by the Laws by which they are now preſerved (for we know none of the mere Laws of Nature, no mechanick Principles, that could put the Planets all pretty near in the ſame Plain, that could incline their Axes to that Plain, or that could revolve them about ſuch Axes;) So the ſame Being who at firſt

* Quæ ſi vera rerum Origo fuit; jam indignum erit Philoſopho, alias Mundi condendi rationes exquirere, vel comminiſci quemadmodum e Chao per meras leges Naturæ mundus univerſus oriri potuerit; quamvis, formatus cum ſit, poſſit is jam per iſtas Leges in multa quidem ſecula perdurare. *Newt. Opt. pag.* 410.

firſt diſpoſed and ordered them in this Manner, may again reſtore them to the ſame State, or make Uſe of them to other Purpoſes, according to his own Will and Pleaſure. So likewiſe with Reſpect to this Earth in particular, and its Attendant the Moon; the natural Conſequence of the preſent Inclinations of their Orbs to each other, is, that there muſt ſometimes happen Eclipſes both of the Sun and Moon, which now and then deprive us of their whole Light; Yet no conſiderate Perſon can think it reaſonable to expect, that the Courſe of Things ſhould be altered, or a Miracle worked, to prevent the Interpoſition of thoſe Luminaries, on Account of ſome Inconveniences that may befall ſome Part of Mankind, through Fear, Ignorance or Superſtition. And if we go yet further, to the

Materials

Materials of which the Earth is compoſed, and take any *One* of them, ſuppoſe that uſeful Metal Iron, to which ſingle Thing is owing the Improvement of all Arts and Sciences; it is no real Objection againſt it, that it will make *Swords* as well as *Plowſhares*, and *Spears* as well as *pruning Hooks*, and conſequently that Men may convert *that* which was intended for their greateſt Benefit, to the Deſtruction of each other. And the ſame will hold in Proportion, in every Inſtance throughout the whole Creation. If there be any *Ends* propoſed in the ſeveral Parts of it, if there be any *Means* proper to obtain thoſe *Ends*, if there be any particular *Circumſtances* and *Condition*, more conducive thereto than others; it muſt from thence unavoidably follow, from the Nature of

of material Things, and the Laws which they are capable of, that they are liable to be diſturbed and interrupted; The Circumſtances they are under, may be altered by the Interpoſition of other Beings; and their regular Effects thereby hindred. And hence it is, that the more *uſeful* any Thing is, that is, the more Purpoſes it can be applied to; the more capable is it of being abuſed: Becauſe in every Inſtance in which it can be applyed, it can be alſo miſapplied. The true Notion of *Good* therefore in the natural World is, not that the Parts of it ſhould be ſo made as to be uncapable of any Change or Alteration, for this the Nature of Things will not permit; but that every Part ſhould ſerve ſome End, and conſequently ſhould be endued with ſuch particular Powers, and in ſuch a certain De-

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gree, as is moſt proper to attain that End. And in this Senſe it is, that every Thing which God has made, is *good*; that the moſt minute and inconſiderable Part of the Creation, ſerves the Purpoſe for which it was intended, as well as the greateſt and moſt magnificent One does in its Place. And whenever the word *Evil* is applyed to any of Them, it is only comparatively; which means nothing elſe, but that they are more or leſs *perfect*, which is not any real Fault: Or elſe it ariſes from our Ignorance or wrong Notions concerning the Things themſelves; when we imagine they ſhould have been endued with other Powers or Qualities than thoſe we find in them, or think they were made for one Purpoſe, when they were really intended for another very different. Upon the

the whole, the State of the Matter ſeems to be reducible to this: There is great *Variety* in the material World, which is the natural Reſult of the different Figure and Texture and Motion of the original Particles of which it is conſtituted: Thus Air, Water, Earth, Stones, Minerals and the like, are only different Compoſitions and Modifications of the ſame Matter. There is alſo a manifeſt *Fitneſs* in every one of *Theſe*, to their proper and Reſpective *Ends*: The neceſſary Conſequence of which is, that where they are rightly and duly adjuſted, there is Order and Beauty and Harmony; and where they are unconnected or miſapplyed, there Diſorder and Confuſion and Deformity immediately enſues. If the Air were put where the Water is, all the Creatures which live in that Element would be de-

ſtroyed; and if the Water took the Place of the Air, all the Plants and Animals on the Earth would be deſtroyed: And the ſame holds true of every Particular contained in them. To ſuppoſe therefore that there ſhould be no *Poſſibility* of *natural Evil*, is alſo to take away all *Poſſibility* of *natural Good*, and to overthrow the eſſential Differences of Things: And to ſuppoſe that there ſhould be no natural Evil *actually* exiſting, is to take away all *Liberty* and *Intelligence*, or, which amounts to the ſame Thing, to ſuppoſe that there are no certain Laws by which any Thing is governed, but the whole left to Chance or Fate. The contrary to all which, is moſt apparent in every Inſtance throughout the whole Creation. There are all the Tokens that can be conceived, of every Thing's being adapted to a peculiar

peculiar Uſe and Purpoſe; which if they do not attain, it is manifeſtly owing to the Interpoſition of ſome other Thing of ſuperiour Force; or to the Actions of Men, or inferiour Animals. This is the preſent State of Things, and the genuine Effect of that Connexion and Dependance which they have upon each other. How long they have continued, or may yet continue in this State, we have no natural Means of knowing, nor of what may ariſe from any new Laws given to them; They are reſolvable into their original Principles, and then capable of an infinite Variety of new Forms. Thus the Earth was at firſt formed out of a Chaos, and may be reduced to a Chaos again, out of which a new and very different *one* may ariſe.

The true Ground of all these Kind of Objections.

Thus we see the Folly and Weakness of condemning the Works of the Creation; even the meanest and most inferiour Parts of it. The Ground of which, seems principally to be this; That we are apt to consider Things *separately* without taking in the Relation or Connexion they have with other Things of which they are truly Parts, and then to imagine that they might have been *better*, because, taken abstractly, they are capable of other Powers or Qualities: Whereas the true Way for us to gain a right Notion of them, is to examine and find out what End or Purpose they were designed for, and see if they are not adapted in the best Manner possible to attain it. Or else, which is still worse, we are apt to take the wrong side; to magnify what we think to be Faults or Irregularities, without

without conſidering how much *Good* or *Benefit* is ſo cloſely connected with them, that upon taking away the *one*, the *other* would immediately ceaſe too: Whereas they ought to be weighed in a juſt Ballance, and then the *Good* will be found vaſtly to outweigh the *Evil*. To theſe we may add, that of thoſe Parts of the Creation which were made for the Uſe and Service of Man, there is a great deal *deſignedly* left to exerciſe his Underſtanding and Induſtry. They are only Materials, which He is to find what they will beſt ſerve for, and to apply accordingly; And were it otherwiſe, there would be no Room for the Improvement of Arts and Sciences. Were every thing of this Kind brought into perfect Order, Man would be deprived of a great Part of the Pleaſure of Life, which conſiſts in

perpetual Invention and Application; and he would quickly find the ill Effects of Indolence upon that *Body*, which was originally framed for Exercise and Labour. And as to those Parts of the Creation which are *noxious* either on the Account of the *Degree* or *Misapplication* of them, there is as much *Provision* made against them, and as many *Remedies* for them, as in the present State of Things they are capable of: Whence most of the foremention'd natural *Evils* are pretty well secured against, in those Places where they often happen; and obtain their Effects chiefly where they are very *rare*, and depend upon a Number of Circumstances not easily to be foreseen. In a Word; we may here use St. *Paul*'s Comparison of a humane Body, and apply it to the whole System of

of Nature, 1 *Cor.* 12. *ver.* 12. *For as the Body is one and hath many Members, and all the Members of that one Body, being many, are one Body,* ſo is it here; all the different Parts of the Creation, make but one Syſtem: *And as God has ſet the Members every one of them in the Body, as it has pleaſed him,* ver. 18; So has He alſo ordered and diſpoſed every Thing in the whole Univerſe as He thought fit. *And if they were all one Member, where were the Body?* It was neceſſary, in Order to compoſe a humane Body, that there ſhould be different Members, to which different Offices are allotted; the natural Conſequence of which is, that *ſome* will be more, and *ſome* leſs honourable, ſome more and ſome leſs comely, and therefore that more abundant Honour ſhould be given,

in Proportion, to them. And the ſame Reaſon holds for the whole Frame of Nature. Were it one uniform Maſs of Matter, there would be no Harmony, Order or Beauty in it. It was therefore neceſſary that it ſhould conſiſt of very different Parts, appointed to ſerve very different Ends. The unavoidable Conſequence of which is, that there ſhould be Degrees of Perfection, and more Care and Pains requiſite in one thing than in another. And it is altogether as unreaſonable to complain of ſuch Diverſity, and to condemn the meaneſt and leaſt uſeful Parts (which are as neceſſary to the Good of the Whole, as the moſt excellent Ones,) as it is for the Foot to complain becauſe it was not the Eye, or the Ear that it was not the Noſe. By this Rule the whole Body ſhould have been Eye or Ear, and

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by the ſame Rule the Univerſe ſhould have been but *one* Thing. Such Objections therefore are very abſurd, and tend directly to overturn the Beauty and Order of the whole Creation.

II. Let us now come to the *Animal* Part of the Creation, and ſee if the Objections againſt That, be any ſtronger than the other. And under this Head, come in all Creatures endued with animal Life; not only Men, but all the Variety of Birds and Beaſts and creeping Things; Becauſe in this Reſpect they are all upon the Level, and the Objections againſt them affect them all equally, *viz.* that they are ſubject to *Pain*, *Miſery* and *Death*. In Order to account for theſe *Evils*, it is neceſſary to conſider the Materials of which the Bodies of ſuch Creatures are originally compoſed, the Frame

Objections againſt the Animal Part of the Creation, conſidered.

Frame and Structure of them, the Powers and Qualities they are endued with, and the like; that we may be able to form a true Judgment of them, and see what is reasonable to be expected from such a Constitution, either as to its Duration, or the Effects which may be produced in it from Things without or within itself: In the same Manner as we have done in the great Machine of the World, the Excellency and wonderful Contrivance of which appears in the most exact Connexion and Adjustment of all its Parts, so as to be the most useful to each other. All that was here required in Order to preserve this System, is only some few general Laws of Motion; which when once impressed on Matter, it is capable of retaining them for many Ages. But though this be sufficient to produce

all

all thoſe Effects which we obſerve in the material World; yet ſomething more than this is neceſſary in the *Animal* World. The Principle of Life is vaſtly ſuperiour to that of mere Motion; nay even *Vegetative Life*, ſuch as all Plants are endued with. There is no ſuch thing as *equivocal* Generation even in *Theſe*; ſomething further is requiſite to the Production of Them, than the bare Heat of the Sun, or Moiſture of the Earth, or any other mere natural Power. And therefore ſome of the antient Philoſophers thought there was an * univerſal *Plaſtick* Nature, by which every one of Them was thus formed. But modern Improvements in Philoſophy, have ſufficiently confirmed St. *Paul*'s Aſſertion,

* Alii Naturam cenſent eſſe Vim quandam ſine Ratione, cientem motus in corporibus neceſſarios; Alii autem Vim participem Ordinis, tanquam viâ progredientem. Cujus Solertiam, nulla Ars, nullâ Manus, nemo Opi-

fex, conſequi poteſt imitando; Seminis enim Vim eſſe tantam, ut id quanquam perexiguum, nactumque ſit Materiam qua ali augerique poſſit, ita fingat et efficiat, in ſuo quidque genere, partim ut per ſtirpes alantur ſuas, partim ut movere etiam poſſint, & ex ſe ſimilia ſui generare. *Tull. de Nat. Deor. Lib. II.*

1 *Cor.* 15. 38. *That God giveth them Bodies as it hath pleaſed him, and to every Seed its own Body.* Every Plant has its peculiar Seed, which in ſome is ſo ſmall as ſcarce to be diſcerned by the Senſes; Yet in ſo minute an Origin are contained the whole Stamina of the Vegetable; all its Veſſels, Fibres and Fruit folded up in the moſt artful and exquiſite Manner: In Order to the Production of which, it is neceſſary they ſhould be put into a proper Soil, where in due Seaſon, the Rarefaction and Fermentation cauſed by the gentle Heat of the Sun, ſo agitates the Parts as to break the *Capſula* in which they are contained; by which Means the Water, watry

Tinctures

Tinctures, and Salts, have an Opportunity of penetrating the ſpongy and porous Fibres, and, inſinuating themſelves into the ſmall Veſſeſs, ſwell and diſtend them till a Circulation of Juices is performed thro' them all. In theſe Juices is conveyed proper Nouriſhment for the ſeveral different Parts, as the Bark, Leaves, Fruit and the like; which after it is ſeparated by the proper Chanels, is conveyed to every one of thoſe Parts, and eaſily converted into the ſame Form, or aſſimilated to Them: For this Nouriſhment being moiſt or liquid, the Texture of it is quickly changed by a gentle Heat and Motion, till it be rendred *like* thoſe denſe, hard and durable Particles, of which the ſolid Parts of the Plant are compoſed; and then it unites with them. This is the Method of Accretion; and in this Manner do all Sorts of Herbs and Trees,

Trees, the Parts of which are ſo various and different from each other, unfold and extend themſelves to ſuch a Magnitude. And much after the ſame Manner, are Animals likewiſe generated; as is evident in all Kinds of Birds, Beaſts, Fiſhes and Inſects, which are produced out of the forementioned Fluids; * and particulary in thoſe Animals which ariſe from Eggs ſo ſmall as ſcarce to be a viſible to the naked Eye, and yet gradually explicate themſelves to a conſiderable Bigneſs, and at length become living Creatures. Analogous to which, is the Tranſformation of ſome Animals from one Species to another, as the Converſion of Tadpoles into Froggs, and Maggots into Flies.

* Ova ex corporibus minoribus, quam ut ſenſu percipi queant, explicant ſe paulatim in magnitudinem, & in Animalia convertuntur: Gyrini, in Ranas; vermiculi in Muſcas. *Newt. Opt. pag.* 379.

And

And as to the Formation of Man, which, with Reſpect to his animal Part, is not much different from that of inferiour Creatures; we have in the 2*d Chap.* of *Gen. ver.* 7. a ſhort Account of the Original of it, *viz. That the Lord God formed Man of the Duſt of the Ground, and breathed into his Noſtrils the Breath of Life, and Man became a living Soul.* In this Deſcription, it is evident that Man is conſidered only as an animated Body, a Creature endued with Life and Senſation; And ſo St *Paul* explains it, 1 *Cor.* 15. 45. *The firſt Man Adam was made a living Soul, the laſt Adam was made a quickning Spirit.* Where, by the Oppoſition of *living Soul* to *quickning Spirit*, it is manifeſt that the former ſignifies only the preſent State of Life; depending upon the Laws of the Creation. Now,

in Order to judge of the *Perfection* of ſuch a Creature, and what *Evils* or *Inconveniences* He muſt be obnoxious to; we muſt diſtinctly conſider the conſtituent Parts of Him, what Powers or Qualities they are each of them endued with, and what Connexion and Dependance they have on one another. The Body, though it be formed out of the Duſt of the Earth, yet, as the Royal Pſalmiſt expreſſes it, *Pſalm* 139. *ver.* 14. *it is fearfully and wonderfully made*; Every Member hath its proper Uſe and Office, and is moſt admirably contrived both for Beauty, Poſition and Conſtitution of its Parts, ſo as with the greateſt Eaſe they execute their reſpective Functions. This is obvious to the meaneſt Capacity, in the Eye and Ear and other Organs of Senſation; And to Thoſe who are more curious

rious in enquiring into the animal Œconomy, the late Improvements in Anatomy have ſufficiently diſcovered the *Uſe* of all the Arteries, Veins, Muſcles, Nerves, *&c.* in Order to preſerve and maintain the Structure of the Whole. Now the Caſe is exactly the ſame here, as it is in the natural World. All finite Powers and Qualities can exert themſelves but to a certain Degree; And as They are very different, ſo they muſt unavoidably in the preſent Circumſtances of Things, ſometimes interfere with and diſturb each other. This could not poſſibly be prevented, if they be ſubject to any Laws at all. And to *this* muſt be aſcribed all the natural *Evils* that the Bodies of Men are incident to, ſuch as *Diſeaſes*, *Pains* and *Death*.

Whence it is that Men and all other Animals are subject to Death.

The *Matter*, of which the Body is formed, is the Duſt of the Earth; Wherefore ſuch as the *Materials* are, ſuch of Neceſſity muſt the Fabrick be: In general it muſt be capable of Diſſolution, or of being reſolved into its original conſtituent Particles; Becauſe whatever the Compoſition be, it can be only the Reſult of the different Texture of ſuch Particles, which Texture may be deſtroyed by any Power ſuperior to thoſe Laws by which it is regulated. Man therefore was originally made *mortal*. It is the Condition of humane Nature, or, as the Author to the *Hebrews* expreſſes it, *ch.* 19. *ver.* 27. *It is appointed unto Men once to dye.* God Almighty did not intend that they ſhould continue iu this State for ever, and therefore made their Bodies proportionable to that Duration which he thought proper for them. And this is very conſiſtent with

with the Sanction of the Law given to our firſt Parents, *Gen.* 2, *ver.* 17. *But of the Tree of Knowledge of good and evil, thou ſhalt not eat of it; for in the Day that thou eateſt thereof, thou ſhalt ſurely die.* This Threatning does not at all imply, but that in their State of Innocence they might have been mortal. Whether they ſhould *actually* have died or no, if they had forborn to eat of this Tree; how long their Lives might have been here preſerved by the Uſe of the Tree of Life, which ſeems to have been planted for that Purpoſe; Or whether they might not have been removed to another State ſome other Way than by Death (of all which the ſcripture is ſilent, and we have no naturalMeans of knowing;)which ſoever of theſe, I ſay, might have been, thus much is certain; that as They

were taken out of the Ground, ſo into the Ground they were capable of returning; and as they were made of Duſt, ſo into Duſt they were capable of being diſſolved alſo. But whatever the particular *Circumſtances* of our firſt Parents were, 'tis evident what *thoſe* are in which Mankind are at preſent. What the Royal Pſalmiſt obſerved in His time, We likewiſe Experience to be the ſame, *Pſ.* 90. *ver.* 10. *that the Days of our Years are threeſcore Years and ten*; that this is the general Period of humane Life, and all that can be expected from the Frame and Conſtitution of the Body, as it now is. For if we obſerve the Courſe and Order of Nature, we ſhall find that throughout the whole Creation this is the Method in which every Thing goes, from the loweſt to the higheſt; They are convert-

converted and transformed from one Species to another, and then return to their Original again. Thus in the inanimate Part, * denſe Bodies by Rarefaction are turned into Air; and this Air by Fermentation, returns back again into denſe Bodies. In the vegetative Part, All Kinds of Plants and Herbs grow out of watry Juices, and by Putrefaction return into thoſe watry Juices again. And the ſame may be applyed to Animals, and particularly to the Bodies of Men. Humane Bodies, as well as Thoſe of all other Animals, and of Plants, are compounded of very different Materials,

* Corpora denſa, fermenteſcendo rarefiunt in varia genera Aeris; & Aer iſte fermentatione, nonnunquam etiam ſine fermentatione, revertitur in corpora denſa. —— Aves omnes, Beſtiæ, Piſces, Inſecta, Arbores, & univerſum Herbarum genus, cum ſingulis ſuis inter ſe valde diverſis partibus, accreſcunt ex Aqua, & Tincturis aquoſis & Salibus; eademque omnia putreſcendo, revertuntur in Humores aquoſos. *Newt. Optic. p.* 379.

fixed and volatile, fluid and solid; as appears by the Resolution of them into their constituent Parts; and they are nourished in the same Manner, *viz.* by Attraction. † For as a Sponge by Suction draws in Water; so the Glands in the Bodies of all Animals, draw different Juices out of the Blood, according to the particular Nature and Constitution of each of them. So long therefore as the Nourishment is proper to assimilate it self to the several Parts of the Body, as it approaches them in its several Channels; or so long as the solid Particles (suppose of * Salts, which are absolutely necessary to the Preservation of all Creatures

† Pari de causa, Spongia aquam suctu attrahit; & in Animalium corporibus Glandes, pro sua cujusque Natura ac Constitutione, Succos diversos sibi e Sanguine attrahunt. *Newt. Optic. pag.* 398.

* *Sir* Isaac Newton *compares a Particle of Salt to a Chaos*, viz. *as being dense, hard, dry and*

Creatures,) retain their Form and Texture; ſo long, *Life* is preſerved and maintained. And when the Nouriſhment becomes unfit to aſſimilate; or the *ſaline* Particles (which towards the Center are very denſe, and therefore capable of ſtrongly attracting the Fluids to them,) loſe their Power of Attraction, either by being divided into ſtill leſs Particles, (as they may be by their watry Parts inſinuating themſelves into their Pores with a gentle Heat;) or elſe by having thoſe watry Parts violently ſeparated from them: in either of theſe Caſes all their Motion will ceaſe, and end in Corruption, Confuſion and Death. And this is abundantly confirmed by Experience; in

earthy towards the Center; and rare, ſoft, moiſt and watry towards the Superficies. Whence it is, that ſuch Particles are ſo durable and require very great Force to diſſolve them. Adeo ut Particula Salis, comparari queat quadantenus ad *Chaos &c. Ibid. pag.* 392.

that every thing which is corrupted or putrifyed, is of a black Colour; which shows that the component Particles are broken to Pieces, and reduced so small, as to be unable even to reflect the Rays of Light. Thus we see that *Death* or the Dissolution of the Body, is the necessary Consequence of those Laws by which it is framed and generated; and therefore is not in itself properly an *Evil*, any more than That Fabrick can be styled *ill*, the Materials or Manner of building of which, would not permit it to last a thousand Years, nor was originally intended to continue half so long.

Whence it is that They are liable to so many Diseases.

And to the same Origin are to be ascribed all the *Diseases* and *Distempers* which Mankind, and all inferior Animals, are incident to. For if the *whole* be liable to Corruption

ruption and Diſſolution; theſe ſeveral Parts, of which it is compoſed, muſt neceſſarily be ſo too. And if a particular Order or Diſpoſition of thoſe Parts, be requiſite to preſerve Health; whatever diſturbs That Order and Diſpoſition, immediately creates a Diſtemper; which if it be ſo violent as to deſtroy the Texture of any one of thoſe Parts, it then becomes irrecoverable, and is a partial Death.' Now there needs but a very ſmall Obſervation of the ſeveral Members of the Body, to ſee how nicely they are framed and adjuſted, ſo as moſt eaſily to perform their reſpective Offices; and how many Ways there are of diſturbing that Frame and Adjuſtment. We may take, for Inſtance, the Eye or the Ear; the former fitted to receive the Impreſſion of External Objects by Means

Means of the Rays of Light, and the latter by Means of the Air; from whence arise those agreeable and useful Sensations of Light and Sound. With Regard to each of These, nothing can be more surprising than the curious Contrivance of them to effect what they were designed for. The Seat of Sensation is in the Brain: In Order therefore to Perception, it is necessary that the particular Motions excited by external Objects, should be conveyed thither; which make different Impressions, or raise different Ideas in the Mind, as they are propagated by a different Medium, or through different Senses. Thus, to produce Vision, it is necessary that the Object be capable of reflecting Rays of Light, and that those Rays also should be capable of being reflected, that they may be thrown upon the Eye: And the same may be said of Refracti-

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on likewiſe, that they may meet to form the Image at the Bottom of the Eye. Hence it is that the Eye is compoſed of different Humours, having different Degrees of this Power proportioned to the Diſtance. It is alſo neceſſary that the Rays of Light ſhould be very ſmall, that they may freely paſs through thoſe Humours; yet that they ſhould be of different Bigneſs and Shape, to excite different Sorts of Colours by their Vibrations. After this Manner the Images of external Objects are conveyed to the Bottom of the Eye, from whence they are carried along through the optick Nerve to the Senſorium, and are there taken Notice of by the Mind; In Order to effect which, it is requiſite alſo that theſe Vibrations ſhould be continued along thoſe Nerves, which are therefore compounded of ſolid, uniform,

uniform and tranſparent Capillaments, containing a Medium proper for that Purpoſe. In the ſame Manner are Sounds likewiſe excited by the different Vibrations of the Air, in the ſame Proportion as thoſe of Light; and carried to the Senſorium by the auditory Nerves. Theſe are all ſubject to particular Laws; the leaſt Alteration or Diſturbance of which, immediately creates a proportionable Diſorder and Confuſion. They muſt therefore in the Nature of Things be liable to as many *Diſeaſes*, as there are Means of preventing or diſturbing their regular Courſe. Thus too great a Quantity of Light, ſhakes the Nerves ſo much as to hinder all Diſtinction; and too ſmall a Quantity does not reflect enough, to take Notice of Objects. If any foreign Juices be mixed with the Humours of the Eye, or if their

Shape

Shape be by any Means altered, ſo that the *Refraction* be too great or too little; then a Dimneſs immediately enſues; And if there be a total Obſtruction in Them or in the Nerves, then follows Blindneſs. And the ſame may be applyed to all other Parts of the Body, according to whoſe different *Powers*, or the different Laws of Motion they are ſubject to; they are incident to various Sorts of Diſtempers.

Whence Monſters and deformed Creatures proceed.

Under this Head may be included Monſters or deformed Creatures. It appears, ſo far as Obſervation goes in Things ſo minute; that, in their Origin, all Animals are perfect, and the Individuals of every Species *folded up* exactly in the ſame Manner; So that if in the *Explication* of them, any of the Parts be, by a ſuperior Force, hindred from extending Themſelves

Themſelves to a due Shape, or if they be any way blended or confounded with each other; then of Conſequence, they muſt either *want* or *abound* in ſome Part or other. But this happens as ſeldom as in the Nature of Things is poſſible; and there is all the Proviſion made againſt it, that the Compoſition of Animal Bodies would allow. It is therefore no juſt Objection againſt Them, any more than it is againſt Trees or Plants; that one Branch of them may by Violence be hindred from growing at all, or very imperfectly; or that by Art, too different Trees may be nouriſhed by the ſame Stock. Such things never come to paſs, but by ſome præternatural Impediment or Obſtruction.

Whence it is that they are liable to Pains, &c.

But the Aggravation of all theſe natural Evils, ſuch as the forementioned Diſeaſes, and even Death

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it ſelf, is, that they are for the moſt part attended with violent Pain and Uneaſineſs. This, * (the Objector ſaith) is that which renders *Man*, and, in Proportion, other Animals, *miſerable* and *wretched*. What the Cauſe of this in general is, is very obvious; *viz.* becauſe, as the Scripture ſays of Man, he was made a *living Soul*, endued with Senſation or the Power of Feeling. Which were He wholly void of, like all mere material things; as He would be free from all Poſſibility of Pain or Miſery, ſo alſo would he be utterly uncapable of any Pleaſure or Happineſs. That Sort of Life which Man was intended to lead here on Earth, manifeſtly requires that He ſhould be

* Si l'homme eſt l'ouvrage d'un ſeul Principe ſouverainement bon, ſouverainement ſaint, ſouverainement puiſſant, peut-il être expoſé aux Maladies, au Froid, au Chaud, a la Faim, à la Soif, à la Douleur, au Chagrin. *Bayle Dict. Under the word Manicheens.*

be endued with a Body proper to perform the reſpective Offices of it. Now whatever Materials we ſuppoſe this Body compoſed of, or whatever the particular Form and Structure of it be; it muſt be liable to the common Laws which the whole material Part of the Creation is ſubject to; and conſequently will ſtand in need of continual Repair, in Proportion to the Variety of its different Parts, and to thoſe Decays and Interruptions, both in the Solids and Fluids, which they muſt perpetually meet with. *Theſe* it is neceſſary ſhould be ſignifyed by ſome Means or other, in order to a continual Supply for them; And we cannot conceive how this could be better done, than by thoſe different Kinds of Pain or Uneaſineſs, which are excited by the Diſorders that the ſeveral Parts of the Body are

ſubject

ſubject to. *Reaſon* alone would go but a ſhort Way in this Matter: We have but a very little Knowledge of the Conſtitution of the various minute Parts of which the Body is compoſed; ſo that it would be impoſſible to find out their Defects and Diſorders, and to apply proper Remedies to them; nor would mere abſtract Reaſon afford Men any Inclination after ſuch Enquiries or Obſervations. Wherefore it is abſolutely neceſſary towards the preſerving of the Animal Life, that the Dangers which the ſeveral Parts of the Body may be expoſed to, ſhould be ſignified by ſome immediate Uneaſineſs, which ſhould excite the *Reaſon* to endeavour to avoid or provide againſt them*. This is the Foundation of all thoſe Affections and Paſſions, uſually aſcribed to the Body, which are but ſo many different Sorts of

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* Read Norris's 'Diſc. on the Love of God'; appx. 295-302. London, 1695.

of Pain: Thus Hunger and Wearineſs put Men upon ſeeking after Food or Reſt, without which they could continue but a very little while; and which they would have no Diſpoſition to, if They were not ſignifyed to them in ſome ſuch Manner as this. And the ſame holds true of all other bodily Appetites and Deſires. And hence I ſuppoſe it is, that the external and ſuperficial Parts of the Body are the moſt ſenſible, and create the greateſt Pain, when they are any Ways affected; becauſe *Theſe* are continually expoſed to the various external Objects; and as ſoon as they are affected by Them, give us immediate Notice of it: Whereas the internal Parts, being more remote, cannot be ſo eaſily come at, and conſequently are not liable to ſo many Interruptions from the Things without, and therefore need

need not ſuch quick Senſation. Thus we experience that the Arteries, Bones and the like, have little or no Senſation at all. This therefore is a very weak Objection againſt the preſent State and Condition of Mankind and other Animals, that they are liable to Pains and Uneaſineſs: By the ſame Argument there ſhould be nothing in the Univerſe but Stocks and Stones; for upon the Suppoſition of any Degree of Senſation, a proportionable Degree of Pain follows upon any Exceſs or Defect whatſoever. The Fault therefore lies not in the Nature and Conſtitution of Animal Bodies; They are in their reſpective Kinds the moſt *perfect* that can be; The Degrees of Senſation they are endued with, are exactly proportioned to that Sort of Life which they were intended to lead, and to the Duration

of it; and the beſt Proviſion that could be under ſuch Circumſtances, is made againſt all Accidents. And we may venture to affirm upon the Whole, that a greater or a leſs Degree would have produced much worſe Inconveniences, as ſufficiently appears by what the Effect of Art or Abuſe is. Neither is it any juſt Ground of Complaint, that there may be ſome particular Inſtances, which, conſidered by themſelves, may ſeem very extreme and difficult. It is not reaſonable to think the eſtabliſhed Laws of the Creation, ſhould be altered or ſuſpended, for the Sake of ſuch ſmall Irregularities compared with the Whole. We ought to form our Judgment not from ſuch ſingle Inſtances which are very complex, but from a general View of the Whole; and then the Wiſdom and

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Goodneſs is plain and perſpicuous in This and all other Reſpects.

Thus it appears from a particular Examination of the conſtituent Parts of animal Bodies, the Powers or Qualities they are each of them endued with, and the Connexion and Dependance they have upon each other; what the natural and genuine Effects of ſuch Powers and Qualities are, and what Miſapplications and Diſorders they muſt in the Courſe of Things be incident to. With this View it was proper to conſider Man, only as an animated Body, as a Creature endued only with Life and Senſation, which He has in common with all other inferiour Creatures; leaving the Conſideration of Him as an intelligent and voluntary Agent, as a Subject afterwards to be treated of. Whence it appears, that as the *Matter* of which hu-

mane and all other animated Bodies are compoſed, is, as the Scripture expreſſes it, the Duſt of the Ground, part of that common Maſs, of which the whole viſible World is framed; ſo it is governed by the common Laws of Gravitation, Cohæſion, Fermentation and the like, which the inanimate Part of the Creation is ſubject to; and conſequently it muſt be liable to all thoſe Irregularities and Diſorders which ariſe from the different Degrees, and diverſe Applications of ſuch Powers or Qualities. But beſides *theſe*, ſuch animated Bodies are alſo ſubject to the Laws of Vegetation, which they have in common with all organized Bodies, ſuch as Plants, Herbs and the like; And hence they are obnoxious to ſuch *Evils* and *Diſorders*, as ariſe from the Motions of Fluids contained in Veſſels; the Effects of which

which are different according to the Degree of Velocity of thoſe Fluids, or the Diſtractileneſs in the Veſſels, *viz.* by too much Nouriſhment they produce Excreſencies, or by too little they wither and die. But That which is peculiar to Them as animated Bodies, is the Power of Senſation or Feeling, which is ſuperior to that of Vegetation, and was evidently deſigned to ſignify the *good* or *evil* State and Diſpoſition of the Body; ſuch Senſations being very agreeable and pleaſing when the ſeveral Parts of it are in their true and proper Order, and very diſagreeable when they are otherwiſe; And Theſe render the Beings that are ſubject to them, neceſſarily liable to *Pain*, *Miſery* and *Death*. So very compounded a Creature is Man, and alſo other Animals; and ſo much depends upon the mutual

Influence of the different Parts of which they are compoſed; The Powers of which, and the Degrees of thoſe Powers, are ſo various, that the leaſt interfering of them with one another, or Miſapplication from any ſuperiour external Force, creates a proportionable Diſorder and Confuſion.

The State of Animal Creatures with Reſpect to each other; with the Objections againſt it.

Having thus examined the Imperfections and Evils that ariſe to ſuch Creatures from their own internal Frame and Compoſition, and the Application of ſuch Means as are neceſſary for their Preſervation and Suſtenance; I come now to conſider them *relatively*, their Diſpoſitions and Affections towards each other, and what the Reſult of them are. For againſt *Theſe* it is objected, That ſeveral Species of Creatures live upon each other. That a great Part

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of the Food even of Man, * is the Fleſh of Animals; nay ſometimes that Individuals of the ſame Species devour their own Kind, as we ſee in Fiſhes; and this not accidentally upon great Provocation, or in Caſes of extreme Hunger or the like, but that they were † originally intended to do ſo, and therefore are naturally provided with Weapons for that Purpoſe; or elſe have a peculiar Diſpoſition and Sagacity to watch after and enſnare their Prey, as is the Caſe betwixt Spiders and Flies. I ſhall endeavour to account for this Difficulty, as far as we have Means of coming to the Knowledge of the particular

* Heu quantum Scelus eſt, in viſcera viſcera condi, Congeſtoque avidum pingueſcere corpore corpus; Alteriuſque animantem animantis vivere leto! *Ovid. Metam. Lib. XV. v.* 88.

† Ἰχθύσι μὲν γὰρ θηρσὶ καὶ οἰωνοῖς πετεηνοῖς Ἔδμεν ἀλλήλους, ἐπεὶ οὐ δίκη ἔστι μετ' αὐτοῖς. *Heſiod.*

particular Circumſtances relating to it.

What Right Man has over inferiour Creatures.

And *Firſt* with Reſpect to Man, and the Right He has of killing and eating ſuch Creatures as afford Food and Nouriſhment to Him; for ſome Creatures, are found by Experience, to be not only nauſeous, but unwholſome likewiſe. That *Man* is ſuperior in Rank and Dignity to all other Creatures of the Earth, is evident from the peculiar Faculties of his Mind, the Degree of Reaſon, Knowledge and Liberty, which He is eminently capable of above them. This ſeems to be a Foundation in Nature for ſome Sort of Authority and Dominion over them, *viz.* to make Uſe of Them to ſuch Purpoſes, as by their Frames and Make they ſeem particularly to be calculated for. Thus ſome are evi-

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dently deſigned for Diverſion, others for hard Labour, others for Swiftneſs and the like. Thus much the Conſtitution and Relation they bear to each other, plainly dictates; for Man's bodily Strength is comparatively very ſmall, and the State of Things is ſuch as requires much Labour and Pains to procure the Neceſſaries and Conveniences of Life, and the Faculties of his Mind were given Him on Purpoſe to ſeek out for Help and Aſſiſtance. And this is confirmed by Scripture, in the Account of the Creation, *Gen. ch.* 1. *v.* 28. *And God bleſſed Them* (that is, the Man and the Woman) *and God ſaid unto them, Be fruitful and multiply and repleniſh the Earth, and ſubdue it, and have Dominion over the Fiſh of the Sea, and over the Fowls of the Air, and o-*

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ver every living Thing that moveth upon the Earth. This Grant being in general Terms, it is not abſolutely certain how far the Words *Subduing* and *Dominion* are to be extended, Whether to the Life of the Creature or no: Though it is not eaſy to ſee how they can otherwiſe be applyed to the Fiſh of the Sea and the Fowls of the Air, which are of little Uſe to Men while alive. But the following Words expreſſly mentioning Food, it ſeems as if That had been excluded, at leaſt not commanded, in the former; *ver.* 29, *And God ſaid, Behold I have given you every Herb bearing Seed, which is upon the Face of all the Earth; and every Tree, in which is the Fruit of a Tree yielding Seed, to you it ſhall be for Meat.* All Other Uſes are manifeſtly implied; with that Limitation

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of the wiſe Man's, *Prov.* 12. *ver.* 10, *that a righteous*, or a merciful Man, *regardeth the Life of his Beaſt*; that is, will not uſe him with Severity or Cruelty, but with Gentleneſs and Moderation. But however this was at the Beginning of the Creation, the Circumſtances and State of Things is liable to perpetual Change and Alteration; and conſequently *That* which was a Duty at one Time may ceaſe to be ſo at another, and *That* may be allowed in ſome Caſes which was prohibited in others. And ſo we find it to be here. In the Bleſſing which God gave to *Noah* after the Flood, the Power of killing and eating living Creatures is given to him much in the ſame Form, as that of eating Plants and Fruit was granted to our firſt Parents before: *Gen.* 9. *ver.* 1, 2, 3, *And God bleſſed Noah and his Sons, and ſaid*

ſaid unto them, be fruitful and multiply and repleniſh the Earth; and the Fear of you, and the Dread of you, ſhall be upon every Beaſt of the Earth, and upon every Fowl of the Air, upon all that moveth upon the Earth, and upon all the Fiſhes of the Sea; into your Hand are they delivered; every moving Thing that liveth ſhall be Meat for You, even as the green Herb have I given you all Things. This Commiſſion is very full and expreſs; only with the Limitation of the following Words, *But Fleſh with the Life thereof, which is the Blood thereof, you ſhall not eat.* Which Words being often repeated, and great Streſs laid upon them, ſhow that they are very material, and, if rightly underſtood, will help to reſolve the forementioned Difficulty.

The Fleſh of ſome Animals, is in it ſelf proper Food for Others.

In general, that the Fleſh of ſome Animals is proper Food for Others,

Others, that is, agreeable to their Taſt, and fit for Nutriment; is evident by continual Experience. And irrational Creatures falling into it by mere natural Inſtinct; and the univerſal Practice of Mankind in every Age and Place, even where there are no Footſteps of divine Revelation, recommending it; ſhows that in the Nature of Things there is no Contrariety in ſuch Application. Whatever Objection therefore lies againſt it, muſt relate to the Manner and Circumſtances of doing it. And the Principal of theſe are, the depriving the Creature of Life, and of all that Pleaſure it was capable of enjoying in the right Uſe of its Faculties and Senſes; and alſo the putting it to all that Pain and Miſery; which a violent and unnatural Death is unavoidably attended with. In Order to a ſatisfactory

Anſwer

Answer in these Particulars, it will be necessary to consider the following Things.

The Right which Man has over inferiour Animals, extends not to any Abuse.

First, That whatever Right Man is supposed to have over inferiour Creatures, either by the Laws of Nature or Revelation, to apply them to his own Use or Service; it is very certain that He can have no Right at all to misapply or any Ways to abuse them. All Kind of Violence or Cruelty therefore exercised towards brute Animals, is both unnatural and unjust. This concerns only Men; For when such Creatures kill and eat each another, they seem not to do it out of Malice, nor to take any Delight in putting one another to Pain, but only follow their mere natural Appetite in the same Manner as they do in Vegetables; They procure them any way wherein they are able to satisfy their Hunger.

And

And this very much abates the Malignity of this Evil; For it is the Notion of Malice or * Cruelty going along with killing the Creature, which renders it disagreeable and odious; For *mere* dying raises no such terrible Image in our Minds. Irrational Animals therefore are only Instruments of Death to each Other; They are void of all evil Design and Intention, and consequently no more culpable than a Stone falling upon them, and by the mere Law of Gravity crushing them to Death. And to prevent any Cruelty in Men who are allowed to feed upon proper Animals, I take the Caution added in the forecited Words; *but the Flesh with the Life thereof, which is the Blood thereof, shall you not eat*; which is afterwards repeated in

* Εἶναι μὲν γὰρ καὶ φύσιν ἀνθρώπῳ τὸ σαρκοφαγεῖν· παρὰ φύσιν δὲ τὸ ὠμοφαγεῖν. *Porphyrii de Abstinentia, Lib. I. §. 13.*

regard to the Sacrifices appointed by the Jewiſh Law, *Deut.* 9. 16. *Only ye ſhall not eat the Blood; ye ſhall pour it upon the Earth as Water.* In the former Words the plain Reaſon is given why they were not to eat the Fleſh with the Blood, *viz. becauſe the Blood is the Life thereof.* In whatever Senſe therefore we underſtand theſe Words, it is manifeſt that *Blood* has a ſtrict Relation to *Life.* Whether therefore the Meaning be, that we are not to eat the Fleſh of any Creature *raw*, while there is any *Blood*, any natural Warmth, or Poſſibility of Life in it, as ſeems to be limited in 1 *Sam.* 14. *ver.* 32; where it is ſaid that the People of *Iſrael* when they returned from the Slaughter of the *Philiſtines*, *being very faint, flew upon the Spoil, and took Sheep and Oxen and Calves, and ſlew them*

them on the Ground, and the People did eat them with the Blood; Which we find in the following Verſe was told to *Saul, as a Sin againſt the Lord, in that they eat with the Blood:* (Whence it ſeems highly probable, that being in great haſt to ſatisfy their Hunger after ſo long faſting, the People fell to eating the Creatures while there were ſome Remains of Life in them, or at leaſt before the Blood was ſufficiently drained from them, ſo as to be aſſured that they were quite dead:) 2. Or whether the Meaning of the Words be, that God had appointed this Token, as a Signal that the Creature was really dead; as ſeems to follow from the Addition of *Moſes, Ye ſhall pour it on the Earth like Water*; that is, when you eat the Fleſh of any Animal, after

you have killed it, you muſt be ſure to pour the Blood on the Ground as a Teſtimony that the Life is entirely ſpent, and then you may prepare and make it ready: 3. Or whether they might not have ſome other figurative and typical Meaning to the People of the Jews, ſignifying that the Right of killing ſuch Creatures was not a natural Right, but only by poſitive Allowance from God; of which their reſerving the Blood was to be a Token and Memorial: 4. Or they might have Regard to the Sacrifice of the *Meſſiah*, whoſe Blood was to be poured out for the Sins of Men: Whichſoever (I ſay) of Theſe or any other, be the original Senſe of the Words, it is obvious that they were intended to prevent all Cruelty towards brute Creatures; and that in *This*, as well as all other Uſes of them, they ſhould be

be put to the leaſt Pain that is poſſible, and *Men* be but mere Inſtruments of their Death. In this View, Men's killing living Creatures for Food, or ſuch Creatures killing one another for the ſame Purpoſe, carries no Malignity or moral Turpitude in it: It is of the ſame Kind with all other *natural* Evils, the Effect of the preſent State and Circumſtances of Things; and no Way to be prevented, but by over-ruling or putting a Stop to the univerſal Laws of the Creation.

Such Creatures originally made ſubject to Death.

Thus They were at firſt made *mortal:* Their Frame and Compoſition ſhow, that They were intended to continue but for a few Years, and ſome of them not near ſo long; The *Materials* alſo, of which their Bodies are framed, and the *Manner* of their Structure, render them liable to many Diſeaſ-

es from within, and Dangers from without, which may bring them to their End much ſooner than the common Period of their Lives. Since therefore they muſt die, and ſince this particular Manner of dying is not attended with any greater Evil, nay generally not with ſo great, as dying by any Diſtemper or Accident; it may very well be reckoned amongſt the common Diſeaſes which they are incident to: And there is no more Reaſon to complain of the one than of the other; For as to the Effect, which is all that we now conſider, there is no Difference to the Creature killed, whether He dyes by the Weapons of his Fellow-Creatures, or by the Violence of a Diſeaſe. The Conditions of Life, we may obſerve to be very various; and the Terms on which it depends, are very different to diffe-

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rent Sorts of Creatures, according to the Climate or Element which they inhabit, or the Food on which they ſubſiſt; ſo that, compared with each other, the Degrees both of Enjoyment and Duration are alſo very different. And herein conſiſts the Harmony of the *Animal*, as well as of the *Material* World. If we ſuppoſe the Exiſtſtence of any one Individual, or any Species of Animals, the ſame Reaſon will hold for the Exiſtence of any other Individual or Species. For, abſtractly conſidered, in the Nature of Things, there is no Preference of one above another. This is Matter of mere Choice and Liberty; and *good* or *evil*, *perfect* or *imperfect*, are here only bare relative Terms: In the ſame Manner as in the planetary Syſtem, the different Bodies of it, ſuch as the Sun, Moon or Earth, are ar-

bitrarily formed out of the ſame common Maſs, and are comparatively *better* or *worſe* according to the *Reſpects* in which they are conſidered. The original Exiſtence of any Matter at all, the particular Quantity, the Diviſion of it into ſmall Particles, the Powers they are ſubject to, and the Texture of them, are in themſelves all indifferent, and depend upon the Will of an intelligent Agent to determine the Particulars of them, ſo as will beſt ſerve the End propoſed. So likewiſe the Animal Powers and Diſpoſitions, and the Connexion and Dependance which they have upon the Structure of the Body, are infinitely various both as to their Degree and Duration, and depend in the ſame Manner upon Intelligence and Will. Wherefore all Objections drawn from what is the natural

Reſult

Reſult of being finite and limited, if they hold good againſt any one Particular's exiſting, they hold as ſtrong againſt any other Particular that can be ſuppoſed to exiſt. Thus in the Inſtance before us: That one Animal ſhould be Food for another, is the natural Reſult of their preſent Conſtitution and of thoſe Affections and Powers they are endued with, and in itſelf no greater an *Evil* than any other *Imperfection* which they are ſubject to, or than other Means or Ways of dying. So that either we muſt ſay, that it is inconſiſtent with the Notion we have of *Goodneſs*, that ſuch Animals ſhould be at all ſubject to Death or any other natural *Infirmities*; or that, of the many *Ways* by which Death is naturally effected, ſome ought to be permitted to produce this Effect, and others not; and conſequently that there is ſomething particular in *This*, why

why it ſhould be prevented. Which that there is not, will appear if we conſider

That 'tis the Circumſtances of Death, that aggravate the Evil of it.

Secondly, That 'tis the Circumſtances of dying, that aggravate the Evil of it. Abſtracted from Theſe, there is no more in it, than in any other natural Imperfection; or than in being deprived of any other natural Benefit, which is not of Right, and which originally depended upon certain Terms and Conditions. That which ſeems to prejudice us here, is, that we are apt to think ſuch Creatures have the ſame Notions of Death as we our ſelves have, and conſequently that it is as terrible to Them: Whereas That which St. *Paul* juſtly calls the Sting of Death, is peculiar to rational and intelligent Beings, ſuch as Men are; *viz.* Sin. 'Tis the Conſciouſneſs of not having acted according to

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the Laws of Juſtice and Truth, and the Senſe of a ſuperiour Power who may call them to an Account and puniſh them for their Neglect or Abuſe in a future State; 'tis This which excites the Fears of Death in Men. But there is no Room for Theſe in inferior Animals: As they are void of ſuch Kind of Reaſon and Conſcience, ſo properly ſpeaking there is no moral Juſtice or Injuſtice, Right or Wrong amongſt them; neither can they be rewarded or puniſhed for their Actions in theſe Reſpects. Wherefore, as they ſeem not to have any Apprehenſions but what are raiſed by preſent Objects, nor any Conſciouſneſs of what is paſt, or Expectation of what is to come; the Foundation of all the forementioned Aggravations of Death is hereby taken away, and there remains no more *Evil* in it than the bare Pain,

Pain, which for the moſt Part is much leſs than in any common Diſtemper.

The State of ſuch Animals is upon the Whole bettered, by being Food for Men.

To this we may add, *Thirdly*, that of thoſe Creatures which are Food for Men, their State upon the Whole is much bettered by it. For not only a greater Number of ſuch Animals are preſerved for this Purpoſe, but alſo greater Care is taken of them, and more Pains imployed about them. Were ſuch Creatures left wholly to themſelves, there are innumerable Accidents by which many of them would be deſtroyed; and thoſe which remained, would go through much Hardſhip and Difficulty: Whereas in the preſent Circumſtances, all the Art and Induſtry of Man is made Uſe of, to improve the Ground for their Suſtenance, to give them Meat in due Seaſon, and to ſecure them againſt all thoſe

Dangers

Dangers which they would otherwiſe be expoſed to. The Lives therefore of ſuch Creatures are hereby rendred the moſt eaſy to them that is poſſible: They enjoy all the Pleaſure and Satisfaction of Life which they are capable of; And were they permitted to continue on till the natural Period of their Lives were finiſhed, it would be but a ſhort Addition of Time; and by Experience we find that their Senſes would grow dull, their Appetites fail them, ſo that they would have but very little Enjoyment left. Wherefore if we put the *Good* they are deprived of, into the Ballance with *That* which is voluntarily conferred upon them, we ſhall ſee that this latter very much outweighs it: So that upon the whole there is no Injury done; not to the Species, becauſe That

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is very much enlarged hereby; nor to the Individuals, becauſe they enjoy more of the Pleaſure of Life than they would otherwiſe do, and they have no Right to the Labour of Men, if they afford them no Advantage by it.

The State of ſuch Animals at the worſt, better than that of many other Creatures.

And if we view the Circumſtances of theſe Creatures in their worſt Light, and compare them with other ſtill inferior Animals; they are in a much better State than many of them. The two chief Properties of Life are the Degree of Enjoyment and the Length of Duration, each of which are very different in the diverſe Species of Animals. Some are by their Frame and Conſtitution made to continue many Years; The utmoſt Period of the Life of others, is comprehended in a few Days, nay we may ſay, a few Hours. The higheſt Enjoyment alſo of ſome, ſeems

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to be but one Degree above Vegetables; whereas in others there are Marks of great Pleaſure and Satisfaction. Compared therefore with *Theſe*, the Life of the forementioned Animals is much preferable; and the *Evil* of that particular Manner of dying, is abundantly compenſated, by the greater *Good* they are upon the whole poſſeſſed of. *Their* Lives might in the natural Courſe of Things have terminated as ſoon as the other; they might originally have had fewer Senſes, or thoſe which they have, much leſs acute. There is no preſcribing Bounds to the infinite Diverſity of things which are equally the Object of Omnipotence. As They had no Right at all to Exiſtence, ſo there is no juſt Foundation of Complaint becauſe *one* poſſeſſes more, or in a higher Degree, of *that* which none originally had any

Title

Title to. According to this Rule, there could have been no *Diverſity* of Animal Creatures, becauſe, when compared together, the State of ſome muſt be *better* than that of others: Which Objection overthrows not only the preſent Creation, but all Poſſibility of creating any finite Beings whatſoever; becauſe they will all, in their Proportion, have their Defects and Infirmities when compared with that which is infinitely perfect. It is therefore much more agreeable to the Notion we have of Wiſdom, that as in the *Material*, ſo in the *Animal* World, there ſhould be all poſſible Kinds and Degrees, which are ſuperiour to Non-Exiſtence. And ſo Experience and Matter of Fact plainly ſhows that there Are.

If

If we consider *Fourthly*, the Effect of Animal Creatures being thus made Food for each other, we shall find that by this Means there is the more Good upon the Whole; For under the present Circumstances of the Creation, Animals living in this Manner one upon another could not have been prevented, but a much greater *Evil* would have followed. For then there could not have been so great a Number, nor so great a Variety of Animals, as there are at present; Some of which are so very minute, and the Quantity of them such, that mixing themselves with Herbs and Plants and Grain on which themselves feed, and with the Water and Liquids which they drink, they must necessarily be devoured by other larger Animals who live upon the same Food, without so much as

By Animals living upon one another, there is the more Good upon the Whole.

being ſeen or any Way perceived by them. It is therefore much better upon the Whole, that They ſhould live upon one another in the Manner they now do, than that they ſhould not live at all. For if ſuch animal Life is to be eſteemed Superior to not exiſting at all, or to a vegetable Life; and the more there is of ſuch animal Life, the more of *Good* there is in the World; it is evident that by this Means there is Room for more whole Species of Creatures, at leaſt for many more Individuals of each Species, than there would otherwiſe be; and that the Variety of the Creation is hereby much enlarged, and the Goodneſs of its Author diſplayed. For the Conſtitution of animal Bodies is ſuch, as requires that They ſhould be maintained by Food: Now if this Food can be made capable of ani-

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mal Life alſo, it is a very great Improvement of it. A certain Quantity of Food is neceſſary for the Preſervation of a determinate Number of Animals. Which Food, were it mere *vegetable*, would perhaps ſerve for That Purpoſe only: But by being ſo formed as to become *animal*, though it be in a lower Degree, and the Enjoyment of Life in ſuch Creatures leſs, yet is it more perfect than unformed Clay, or even than the moſt curious Plant. Thus the animal Part of the Creation has its ſeveral Degrees of Life, and as much Variety in it, as is to be found in the inanimate and vegetable Part; ſo that in this Reſpect, there is ſo far from being any juſt Ground of Complaint, that the Wiſdom and Contrivance of the animal World is admirable, and plainly ſhows the Excellency of the Whole, and the

Subſerviency of all the Particulars in order to obtain the greateſt Good that they are capable of.

The permitting ſuch Creatures to increaſe, would be of very ill Conſequence.

I ſhall mention but one thing more upon this Head; and that is, to conſider what the Conſequence would be, of permitting ſuch Creatures to multiply and increaſe as much as they could, and to die of ſuch Diſeaſes as they are incident to, or even of old Age. This cannot certainly be determined any otherwiſe than by Experience; but there is juſt Reaſon to think that Mankind would be the greateſt Sufferers hereby. * We ſhould quickly be over-ſtocked with them. Thoſe which are now tame, would grow wild, and be very miſchievous; and the Plants and Fruits

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* Καὶ γὰ πρόβατον ἢ βοῦς ἢ πᾶν τὸ τοιῦτο μειζιάζον ῥᾲον, φέρει πνὰς πρὸς τὼ ἀναγκαίαν ἡμῖν διαγωγὼ ὠφελείας· εἰς πᾶσαν ὃ ἐκπεσὸν ἀσφάλειαν ἢ μακρὰν ὑπερογὼ ἔχουσαν τῆς καθεστώσης, λυμαίνοιτ' ἂν τὸν βίον ἡμῶν. τὸ μὲν ἢ πρὸς ἀλκὴν τρεπόμενον, ἅτε φύσεως ἐνάφυοῦς εἰς

Fruits of the Earth would be all destroyed by them: The Air probably † would be infected by them, at least by the Corruption of their dead Carcasses, and perhaps some violent Distempers produced by them. The Plagues brought upon the Land of *Egypt* in this Manner, and the Unwholesomeness of Wilderneſſes and desert Places, *where,* as the Scripture describes them, *Deut.* 8. *ver.* 15. *are fiery Serpents and Scorpions and Drought where there is no Water,* for Want of the Arts and Improvements of Men; *these* give sufficient Ground for the forementioned Conjectures. There are perhaps many other Particulars which escape our Notice for Want of

τῦτο μετέχον· τὸ ὃ μόνον τῷ ἀνεθεῖναν ἡμῖν ἐκ γῆς τεφρὼ καπαναλίσκον· *Porphyr. de Abstinentia,* &c. *Lib. I.* § 11.

† Ἡ γῆ τε τὸ πλῆθος ἐκ ὑσιῶν ψυχῶν, τὰ τεθνήκοντα, ἐκ τῆς σωπηδόνος φθορὴν ἐμποιήσει. *Porph. ibid.* § 16.

knowing all the minute Circumſtances of ſuch Creatures; the Relation they ſtand in to each other, and to the Things about them. Thoſe already mentioned ſeem to be the principal, and, if not wholly to take off, yet very much to diminiſh the Weight of the Objection before us.

I have now gone through what I propoſed under the firſt Head of this Diſcourſe, *viz.* to examine into the Nature of thoſe Laws, by which both the *Material* and *Animate* Parts of the World are at preſent governed; and to compare them with ſuch other Laws, as they were originally equally capable of being governed by: That from hence it might appear, that all thoſe natural *Evils* which are obſerved in the Creation, and by many thought to reflect upon, or detract from the

Wiſdom

Wiſdom of its Author; are ſtrictly and properly ſpeaking, no *Evils* at all; but only the genuine Reſult of that Want or Imperfection, which finite and created Things, endued with various Powers and Qualities, and with different Degrees of them, and regulated by ſuch general Laws as we obſerve, muſt unavoidably be liable to.

The general Application of the Whole.

And this, I think, does moſt apparently diſplay the Excellency and Goodneſs of the Works of the Creation, and as evidently manifeſt the Wiſdom and Power of Him who made Heaven and Earth. For from hence it clearly follows, that no one Part of the Creation being *neceſſary*, but ſuch as might equally either originally not have exiſted at all, or have exiſted in a quite different Manner from what it does now; hence I ſay it fol-

lows that their *Beings*, *Powers*, *Faculties* and *Perfections*, every Thing which they poſſeſs or enjoy, is the free Gift of God, and depends wholly upon his Will for their Continuance or Duration. He is infinitely happy in the Enjoyment of his own Perfections, and the whole Creation can make no Addition to his Happineſs. He could therefore propoſe no other End in the Creation, but to manifeſt his Power and Wiſdom in the *material* World, by the wonderful Order, Harmony and Adjuſtment of all its Parts ſo as to be moſt conducive and ſubſervient to the Beauty and Excellency of the Whole; and to communicate ſome Share of Happineſs to the *animal* World, proportionably to the ſeveral Capacities and Degrees of ſuch Creatures: And therefore He appointed all the particular

Circum-

Circuſtances and Conditions of them, ſo as He thought moſt proper to procure ſuch Happineſs. Every Thing whoſe Exiſtence is poſſible, is the Object of Creation to infinite Power; and it belongs only to the Wiſdom of the ſame infinite Being, to determine which of them ſhall actually exiſt. Thus whether any *material* things ſhould have exiſted at all, depended entirely on the Will of the ſupreme Being. And the ſame may be affirmed of their Powers and Qualities, and the Laws which they are ſubject to. Upon Suppoſition that they do exiſt, there are in the Nature of Things ſome Powers and Qualities they are capable of receiving, and others not; As, in the Inſtance of *Matter*, there are vaſt Variety of Laws of Motion which it may be ſubject to, and which produce very different Effects; but

but *Understanding*, *Liberty* and the like, it is in its own Nature uncapable of: And of those Laws by which *it* may be governed, there is no other Rule of judging, but from the End to which they are appropriated. The whole Scheme of the material World was at first laid in the divine Mind; in Order to effect which, it appears by manifold Experience, that the original Particles of Matter have * certain Forces impressed upon them, which, according to their different Circumstances of acting, either *impell* them towards each other, and cause them to cohere in regular Figures; or else separate them, and cause them to recede from one

* Nam multa me movent ut nonnihil suspicer ea omnia ex viribus quibusdam pendere posse, quibus corporum particulæ per Causas nondum cognitas vel in se mutuo impelluntur & secundam figuras regulares cohærent, vel ab invicem fugantur & recedunt. *Præf. Newt. ad Princip.*

one another, thereby to diſſolve ſuch Cohæſion; which *Forces* are in themſelves purely indifferent, and choſen only becauſe moſt adapted to obtain the End propoſed. Every Revolution and Error therefore is regular and deſigned, being only the Effect of a Cauſe acting uniformly and by a ſtated general Rule; which is much more agreeable to the Notion we have of Wiſdom, than to imagine the Courſe of Things ſhould be perpetually interrupted and confounded. The ſame is true alſo of the *animal* Part of the Creation, the ſeveral Species of living Creatures which move upon the Earth: They had no Right to exiſt at all, much leſs had they any Right to be of any particular Rank or Order, in the infinite Variety that in the Nature of Things were poſſible to exiſt. So that their animal Powers, the Faculties

culties and Abilities they have, and the reſpective Degrees of them, are of mere voluntary Donation; And to have them depend upon certain Terms and Conditions, and in many Caſes to be liable wholly to be deprived of them, is no more a real *Evil*, than not to have exiſted at all: Their Exiſtence being manifeſtly a free Gift, the Continuance or other Circumſtances of which, are entirely in the Power of the Donour. This cannot be better illuſtrated, than by the Prophets Similitude as quoted by St. *Paul*, *Rom. 9. ver.* 20. *Shall the Thing formed ſay to him that formed it, Why haſt thou made me thus? Hath not the Potter power over the Clay, of the ſame Lump, to make one Veſſel unto Honour and another to Diſhonour?* So has the infinitely powerful and allwiſe Being, an abſolute Right to make ſeveral

Ranks

Ranks and Degrees of Creatures, which comparatively ſpeaking are more or leſs *perfect*, but every one of them in their proper Place moſt conducive towards attaining the End deſigned in them all. And it is altogether as unjuſt and unreaſonable to complain of any one of them becauſe it is of an inferiour Nature or Degree than another, as it would be to reflect on the Skill of an Artificer becauſe He faſhioneth ſeveral Kinds of Veſſels for different Uſes, ſome of which are more beautiful and ſerviceable than others. The Ground of all ſuch Complaints as theſe, ſeems to be this; that we are apt to form our Judgment of the Creation, from conſidering only ſome of the moſt inferiour Patts of it, independent of the reſt: Which is juſt as if, to uſe the forementioned Similitude,

militude, a Man ſhould pick out of the Potters Shop the meaneſt Veſſel, or view only the unformed Clay, the Uſes of which he was in a great Meaſure ignorant of, and hereupon immediately condemn both the Materials and the Skill of the Potter. The whole Creation is indeed but one *Work*, one *Building*, the ſeveral Parts and Inhabitants of which, have a ſtrict Connexion with and Relation to each other. In Order therefore to form a true Judgement of it, it would be neceſſary to comprehend the Whole of it in one View; to have an exact Plan of all that is paſt, preſent and to come; and ſee the mutual Dependance of all the the Parts. But this is impoſſible for our narrow Capacities to do; It is a Defect in the Nature of Things, which is impoſſible to be remedied. Their Proportions are unalterable;

alterable; and we might as well expect our Eye ſhould take in the whole Compaſs of the fixed Stars, and diſtinctly ſee every individual Thing contained in them, as that our Underſtanding ſhould comprehend the Uſes and Ends of all the Works of Nature and Providence. All Objections of this Kind therefore are wholly beſide the Queſtion. That which truly follows from a juſt Examination of the preſent State of Things, even in the worſt Light, is no more than this: That as, in the Nature of them, they muſt be liable to perpetual Mutations and Revolutions; and when they are at the worſt, and have ended one Scene, they are yet capable of affording Materials for another; in the ſame Manner as out of a Chaos the preſent Earth was formed, and from This again, as St. *Peter*

Peter says, will at the Consummation arise a new and different one: So likewise with Respect to Animated Creatures, we see the same Individual living under different Forms and in different Elements here. *Life* therefore does not wholly depend upon the Body, but only the *Manner* of living: And what may come hereafter, as we do not particularly know, so we ought not to give our Judgment. That which remains farther to be considered upon this Subject, is the Cause and Origin of *moral Evil*; whence Sin has its Rise and abounds so universally in the World. But This, as it is of great Moment to be known, so it ought to be treated of particularly by it self.

Continued.

FINIS.